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PEDIATRICS

A SEMI-MONTHLY JOURNAL

DEVOTED TO THE STUDY OF

DISEASE IN INFANTS AND CHILDREN

DILLON BROWN, M.D.,
NEW YORK.

GEORGE CARPENTER, M.D.
LONDON.

VOLUME XIV.

July 1st to December 15th,
1902

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Volume XIV, July 1 to December 15, 1902

Dillon Brown, M.D.
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EDITORIAL COMMENTS.

Tuberculosis of the Pharyngeal Tonsil

In an article entitled "A Study of Hyperplasia of the Pharyngeal Lymphoid Tissue (Adenoids) with Especial Reference to Primary Tuberculosis of the Pharyngeal Tonsil" (*American Journal of the Medical Sciences*, June, 1902), Dr. A. J. Lartigau and Dr. Matthias Nicoll, Jr. record their painstaking endeavors to ascertain the frequency of tuberculosis of the pharyngeal tonsil. Seventy-five consecutive specimens of adenoids were tested for tuberculosis. Alternate pieces of each growth were used for inoculation experiments and the remainder was set aside for histological examination. With the exception of the first seven specimens the portion of tissue set aside to be inoculated was reduced to a pulp, the juice therefrom filtered through sterile cheese-cloth, and the filtrate was then inoculated beneath the skin of the groin of a guinea-pig. In the first seven cases the alternate pieces were merely introduced subcutaneously without pulpification.

Two animals died, on the sixteenth and twentieth days respectively; no evidence of tuberculosis was found in them. All of the other animals died or were killed after the twenty-seventh day; most of them died or were killed after the fortieth day. The presence or absence of tuberculosis in the inoculated animals was always tested by microscopical examination of the tissues at the seat of the lesion and elsewhere. Tubercle bacilli were always demonstrated in the lesions of the positive cases. Tubercle bacilli were looked for only in the sections of those specimens which induced tuberculosis in guinea-pigs, since it was assumed by the authors that the far more delicate inoculation test was decisive. As an evidence of the great care taken in this work in each of two cases over 125 sections were examined before the organism could be demonstrated. Of the 75 specimens tested, 12 induced tuberculosis in the inoculated animals; hardened tissues of eight of these specimens contained both tubercle bacilli and lesions histologically more or less characteristic of tuberculosis. The remaining four specimens contained tubercle bacilli, but presented no histological evidence of tuberculous lesions. The eight considered as positively tuberculous showed giant cells, caseation and epithelioid cells. The remaining four showed none of these elements. In all cases the bacilli were more or less close to the surface and few in number; the lesions of seven cases were likewise peripherally situated, close to the epithelium and quite local in character. Four showed single tubercles; in two of the specimens the histological lesion was diffuse but not extensive. One specimen only showed a lesion in the middle of the adenoid tissue, consisting of a single tubercle. The morphology of the tubercles is said to have been generally characteristic; almost all seemed to be of recent formation. Very little caseation was noted; and giant cells were few in number or not present. The authors seem rather inclined to include the cases presenting bacilli but no characteristic tuberculous lesion as tuberculous cases. The tubercle bacilli present in these specimens were specially tested as to their virulence. One contained bacilli of moderate virulence while the other two showed bacilli of low virulence.—While considerable work has been done within the last decade on the subject of the relation of tuberculosis to pharyngeal adenoid tissue much of it is of an incomplete kind. Many investigators looked for histological evidence alone, others sought only the bacillus in the tissues, often in a more or less careless manner no doubt; but few undertook inoculation experiments in addition. The authors point out that it is only by the most careful work that we can certainly determine the frequency of tuberculosis of adenoid tissue and its relation to a general process. T.

ORIGINAL ARTICLES

THE MICROSCOPIC EXAMINATION OF CONJUNCTIVAL DISCHARGE.*

By EDGAR S. THOMSON, M.D.,
New York.

I HAVE been asked to present to you this evening a brief account of the morphological characteristics of the most important bacteria found in conjunctival discharges and the methods of their identification. They are:

1. The gonococcus of Neisser.
2. The intracellular diplococcus of meningitis (Neumann and Schäffer).
3. The bacillus of diphtheria (Klebs-Loeffler).
4. The pneumococcus of Fraenkel and Weichselbaum.
5. The bacillus of Weeks.
6. The staphylococcus in its various varieties.

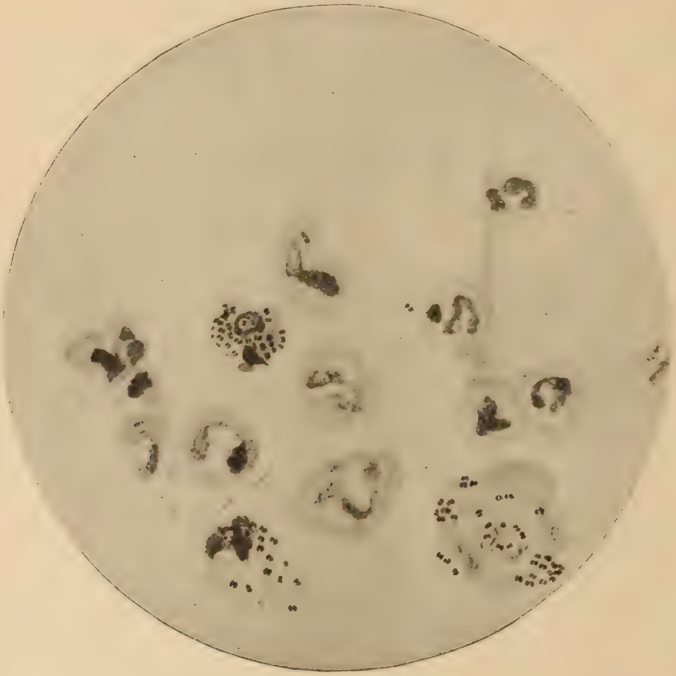
Other bacteria of less importance in the present connection are: the diplobacillus of Morax and Axenfeld, the xerosis bacillus of Colomiatti, the pneumobacillus of Friedländer, the streptococcus, the bacillus of tuberculosis, the bacillus coli communis, and others.

I do not wish to be understood as saying that any study of bacteria is complete without making cultures, but these take a great deal of time, trouble and apparatus, and it is possible to gain much valuable information from the simple examination of the smear of pus. The slides should be carefully cleansed with alcohol and wiped dry; then the lower lid of the patient is everted and a little of the pus is carefully lifted out of the cul-de-sac on a platinum wire loop and spread very gently and thinly upon two slides. These are allowed to dry when they may be wrapped up, face to face, and carried home for examination. It is important to take the pus from the cul-de-sac only and not from the edge of the lid, as pus from the latter situation may show other forms of bacteria than the characteristic one. It is also important to spread the pus on the slide as gently as possible; if the smear is roughly made the relations of the bacteria to the pus cells may be greatly disturbed. This is particularly the case with pus from a gonorrheal case.

---

* Read before the Medical Society of the County of New York, April 28, 1902.

After fixation the staining is best done by pouring a few drops of Loeffler's methylene blue (concentrated alcoholic solution of methylene blue 30 parts, aqueous solution of caustic potash (1-10,000) 100 parts) on the slide and rocking it for a few moments back and forth over the smear. As soon as the smear begins to be decidedly colored the slide should be freely washed in running water and then allowed to dry.

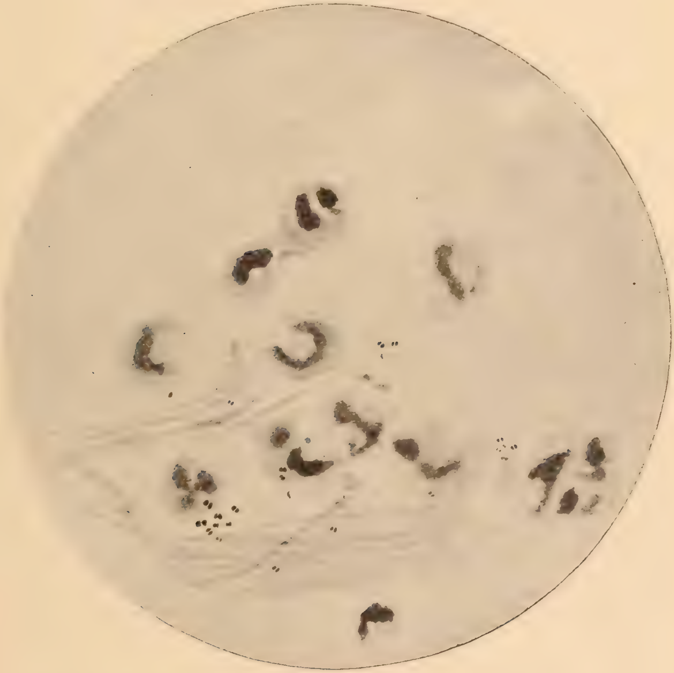


Gonococci from a case of Ophthalmia Neonatorum.
(Leitz, 1-12 Oil Immersion, ¼ Eye piece.)

A $1/12$ immersion lens is needed. No cover-glass is necessary; the drop of oil is placed on the slide and the whole smear can be carefully examined.

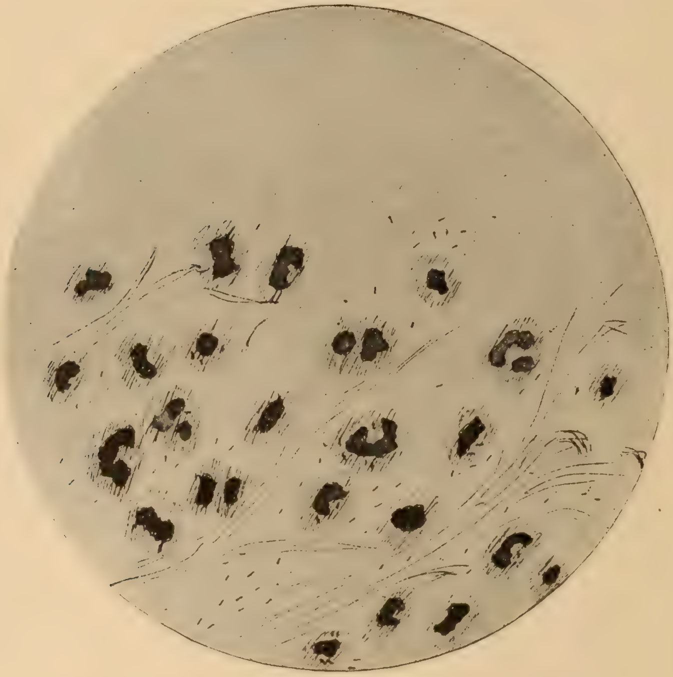
The varying elements found are, first and most conspicuously the large pus cells with deeply-stained, irregular, sometimes multiple nuclei and faintly stained cell substance. Here and there a large squamous epithelial cell will be seen with a small round nucleus. Strings of mucus may also be found. Generally the more severe the discharge, the more pus cells we shall find and the less mucus, but as the process subsides mucus is more plentiful and pus cells are less.

The gonococcus presents a very characteristic appearance and is shaped like two concave biscuits with the concavities facing. It is surrounded by a clear capsule which can best be seen when the coccus is inside of a pus or epithelial cell. The capsule then shows as a white ring surrounding the deeply stained coccus and showing distinctly against the blue of the cell. It occurs in large clusters lying chiefly in or on the pus cells in carefully made smears. Where many are found outside the cells they are due to carelessness in making the smear and have been rubbed out of the cells. Not all the members of the group will show the characteristic form, but it can be seen



Diplococcus Intracellulaus Meningitidi. (From a case of Acute Conjunctivitis.) (Leitz, 1-12 Oil Immersion, ¼ Eye piece.)

in the majority, and we shall usually find cocci inside the nucleus on account of the marked tendency to penetrate which this germ possesses. If then we find a deeply stained, encapsulated diplococcus, of the characteristic shape, lying chiefly within the cells, we can usually make a diagnosis of gonorrheal conjunctivitis. The only other bacterium likely to be taken for the gonococcus is the intracellular diplococcus of meningitis. This gives rise to a form of acute purulent conjunctivitis, or "pink-eye." The appearance under the microscope usually differs, however; the diplococcus of meningitis is found largely outside of the cells, rarely in the cells and never within the nucleus (Park). The form is not usually so characteristic but it may have the exact shape of the gonococcus. In most cases these points are sufficient to make a diagnosis, but where doubts still remain and the clinical type of the case is not marked, cultures should be made. The gonococcus does not grow readily in cultures, the diplococcus of meningitis does.



Bacillus of Weeks. (From a case of Acute Conjunctivitis.)
(Leitz, 1-12 Oil Immersion, ¼ Eye piece.)

The Klebs-Loeffler bacillus of diphtheria is not commonly found in the conjunctival discharge. It is a short thick bacillus (as compared with the tubercle bacillus), with clubbed ends, slightly curved and stains irregularly. Whenever a bacillus of this character is found cultures should be made as slide examinations are not sufficient. The xerosis bacillus of Colomiatti in many cases resembles closely the Klebs-Loeffler bacillus and it is impossible to separate them morphologically. Cultures alone will establish the diagnosis.

The pneumococcus is found frequently as the cause of acute contagious conjunctivitis, or "pink-eye." It is shaped like two cartridges with their bases together and is surrounded by a hyaline capsule, or it may be like two ovoids, end to end. It occurs in clusters lying between the cells. The shape is so peculiar that a differential diagnosis is easy.

The Weeks' bacillus is by far the commonest bacterium found in the ordinary case of pink-eye. The diagnosis is readily made by slide smears. It is a short thin bacillus, shorter and slightly thinner than the tubercle bacillus and stains to nearly the same intensity as the pus cells, usually a very little deeper, but not so deep as the pus nuclei. It is therefore not as conspicuous as other more deeply staining germs, and the slide must be closely and carefully examined. In typical cases it occurs in large numbers lying scattered in the mucus and between the cells and the pus cells.

The different forms of staphylococci occur commonly in conjunctival discharge and have very little especial significance. They occur in large groups of single round cocci, or in irregular arrangements, lying between and sometimes in the pus cells. They stain more deeply than in the pus nuclei and therefore show plainly.

With these few principles and facts one can in most cases arrive at a satisfactory conclusion about the average case of purulent conjunctivitis. Of course if discrepancies exist, or if other forms of bacteria are observed, cultures should be made in order satisfactorily to determine the status of the case.

16 East Forty-third Street.

ACUTE ENTEROCOLITIS IN INFANCY.

By Louis William Johnston, M.D.,
Tuskegee, Ala.

WHEN we realize the great mortality of this disease, being greater than that of any other disease of childhood, our minds naturally begin with prophylaxis, than which no more promising field is open to investigation and study.

Prophylaxis should aim at the solution of two distinct problems:

1. The removal of the causes which interfere with the proper growth and development of children.
2. The prevention of infection.

The former can come only through the education, first, of the profession, and then of the general public, in the fundamental principles of infant feeding and hygiene. This is a department which has received altogether too small a space in medical education. The latter must come through the profession and through legislation, the purpose of which shall be more thorough disinfection and improved sanitation in all departments.

Enterocolitis is a disease of the hot months and of the period of teething, though not confined to either. Exposure to cold and damp, the sudden suppression of perspiration, overcrowding, over-feeding and irritating contents of the bowels, are the most common exciting causes. It may be secondary to any of the infectious diseases, particularly measles, diphtheria and bronchopneumonia.

Pathology.—The morbid changes are found chiefly in the ileum and colon. In the first stage the mucous membrane is congested and swollen. In places the epithelium appears exfoliated. After the first week the enlarged follicles and Peyer's patches become ulcerated. The disease may end here or become more extensive, the ulcers enlarging and deepening to the muscular coat with the separation of a slough. Or there may be a diffuse infiltration of the coats of the bowel with small cells, producing a decided thickening of the same, with more or less obliteration of their distinct structure. The process may be so intense as to cause coagulation-necrosis or false membrane (Tyson). The liver and portal circulation are always engorged.

Symptoms.—This affection shows many grades of severity. There is languor, great fretfulness and fever. The early catarrh is attended by green, acid stools, with lumps of casein. At first the tongue is furred and moist. It soon becomes red and dry and vomiting ensues. The stools are offensive and frequent, and in addition to the appearance first indicated, contain mucus and blood. Death may take place within the first week on account of exhaustion from the vomiting and diarrhea. If the disease is protracted it is attended by great wasting, symptoms of hydrocephalus, skin eruptions, hypostatic pneumonia and extremely weak circulation. A sudden rise of temperature in the course of an attack would point to some complication, or to an extension of the inflammation to new areas.

The head and the nervous system are generally only slightly affected, though we sometimes have twitching and convulsions. The stools vary in number from two to twenty or thirty per diem. In severe and protracted cases the stomach becomes greatly disordered, nausea and vomiting are troublesome and the breath is sour, offensive, and, at last, even fetid; the lips and teeth are covered with sordes; colicky or griping abdominal pain is a quite constant symptom; tenderness on pressure is usually present; tympanitis is a common symptom; considerable enlargement of the abdomen occurs in cases in which the muscular coats of the intestines have become weakened or paralyzed by the inflammation; tenesmus and prolapsus ani are not uncommon. In mild cases improvement may commence in the course of two or three days and easy convalescence be established. Even in these cases, however, relapse is easy from indiscretion of diet or mild exposure. In the severer cases the course is often prolonged to from three to six weeks; there is more pyrexia; the diarrhea is increased; the tongue becomes dry, red or brown, the face anxious, cold, clammy and purplish, and the pulse small, weak and rapid; hiccough occurs and cannot be relieved. The patient lies on the back with knees drawn up. Death may occur from asthenia, septicemia, or perforation and peritonitis. Slow and tedious convalescence may occur, or the disease may assume the chronic form.

Diagnosis.—Acute enterocolitis is to be distinguished from cholera infantum, acute dyspeptic diarrhea, typhoid fever and intussusception. From cholera infantum it differs in its lower hyperpyrexia and in the absence of vomiting, of colliquative diarrhea and of collapse. It is characterized by greater severity than acute dyspeptic diarrhea and by high fever, the large amount of mucus in the stools, the greater pain and suffering and the more rapid decline. Typhoid is usually distinguished by its more constant fever, the enlargement of the spleen, the tympanitic distention of the abdomen, and most of all, by the eruption. The fact of an epidemic prevailing is also to be considered. Intussusception is marked by a very sudden onset, the amount of blood is quite large, often as much as a tablespoonful; there is vomiting, sometimes persistent, with marked prostration, but no fever; stoppage of bowels, abdominal tension, tympanitis, rising temperature, stercoraceous vomiting and collapse, all different from the phenomena of dysenteric colitis.

Prognosis.—It is never safe to give a positively favorable prognosis until the end of the hot season, on account of the great liability of these cases to relapse and recurrent attacks. Cases occurring in June or early in July have a worse prognosis than those occurring in the latter part of August or in September, for the reason that the earlier cases have still the greater part of the summer to get through and are likely to suffer from relapses during the rest of the warm weather. In cities, among the poorer classes, and in institutions, and in the presence of any complication the prognosis is still less favorable. The particular symptoms which make the prognosis bad are a continued elevation of the temperature, frequent vomiting, rapid wasting and continuous severe nervous symptoms. Do not give up the little patients too quickly, for I have seen cases where all hope was lost, the children becoming too feeble to swallow, but by feeding with the stomach tube and by inunctions of oil or lard the vital forces would rally and recovery take place.

Treatment.—Having laid down the important hygienic rules of fresh air, frequent bathings, cold cloths and not too frequent feeding as preventive means of this disease, Chapin thoroughly discusses the subject of its treatment. Bearing in mind that a majority of the cases are caused by milk poisoning all forms of milk should be temporarily withheld. In the interval water may be frequently given with the addition of a little lime water. If the stomach tends to reject it, reduce the quantity.

Many a case would be stopped at the very beginning if milk were entirely withheld for from 12 to 48 hours. When this is necessary for any length of time other forms of nourishment may easily be substituted. The white of an egg stirred in half a glass of cool water forms a pure and easily assimilable albumen-water. The only objection is its tastelessness, but Chapin overcomes this by the addition of about 2 drops of aromatic spirits of ammonia. When there is a tendency to vomit, the ammonia seems to check the stomach irritation. Among other substitutes for milk may be mentioned thin gruels, made from barley or wheat flour, broths, beef juice; also some of the prepared milk foods. I use one preparation more than all others at this period, namely, the beef peptonoids with creosote, and I have seen very few stomachs reject it. Not only do I use this preparation for sustaining the patient but for the beneficial effect of the creosote, which, I think, is the ideal antiseptic in these cases. I will call your attention to this later. When the acute symptoms have subsided and milk is resumed it must be taken at long intervals and with high dilution.

With regard to drugs, I think if the patient has been sick for several days before a physician is called in, and, as is usual, you find high temperature, I would always use stomach lavage and high enemata with normal salt solution unless the patient is very nervous and excitable; then follow with calomel 1-10 grain every hour, with 15 to 30 drops each of liquid phos. soda and elixir of pepsin, until six or eight doses have been administered. These small doses act as a sort of stimulant to the bowel, increase glandular secretion and usually effectively clear the canal of its fermenting contents. A good-sized dose of castor-oil is also effectual and is followed by a sedative effect on the mucous membrane. After you have flushed the alimentary tract, place a baby of from 6 to 12 months on from 10 to 20 grains of the subnitrate of bismuth in a weak creosote emulsion about every two or three hours.

The insoluble quality of bismuth added to its sedative local effect makes it most valuable. Irritation and fermentation, even under proper dietetic management, remain long in the ileum and colon, and this tract is reached by the local action of the bismuth. The creosote has a special sedative action upon the nerves of the stomach and allays irritability and nausea. Being a superior antiseptic it exerts its germicidal effect through the whole alimentary tract and the secretions seem to keep up better under its influence. We are not so likely to have complications when we keep patients under the influence of creosote. Fever is best controlled with cold applications or baths. I always advise the use of some antiseptic mouth wash. For relieving the nervous symptoms and frequently when suffering, 10 to 30 drops of bromidia per rectum, well diluted, gives splendid results. Anodynes should be tried before using opiates.

Opium is contraindicated until the bowel has been thoroughly emptied of irritating contents, especially when the stools are scanty and foul-smelling and when cerebral symptoms threaten. In cases, however, in which rapid peristalsis and profuse glandular secretion persist a few moderate doses of opium are most valuable. It should never be combined with other drugs. Small doses of aromatic spirits of amonia, say 10 to 20 drops, well diluted with water, seem to stimulate the mucous membrane and refresh the infant. Alcohol should be given very sparingly in these cases as it seems to lower the digestive powers. In cases of great weakness or collapse from 10 to 30 drops of whisky, well diluted, may be administered. If the discharges are profuse and exhausting and the baby sinks into a semi-stupor, with depressed fontanelle, very free stimulation with whisky and ammonia is indicated, as spurious hydrocephalus is thus ushered in. Hypodermoclysis has been used with beneficial results in such conditions. In case of collapse, hot injections (110° to 115° F.) have been advised, and in case of high temperature ice water may be used with advantage. In using enemata for local effect the intestines should first be emptied by an ordinary saline solution, except when nitrate of silver is to be used; then simple water should be employed. The clyster is used about half an hour afterwards and should not be over 2 to 6 ounces, slowly introduced, the buttocks being pressed firmly together and thus held for 20 to 40 minutes. For use in this manner the following substances are to be preferred: (1) Bismuth suspended in mucilage (ʒss to ℥i) from 4 to 6 ounces to be injected; (2) tannic acid (grs. xx to ʒi) same quantity of vehicle to be used; (3) nitrate silver (grs. ii to ʒi) in 4 ounces of water; (4) boracic acid (ʒi) in 4 ounces of water; and (5) bland mucilaginous mixture with opium. For tenesmus, suppositories containing cocaine sometimes act like a charm. Dr. J. H. Kellogg, of Battle Creek, advises the use of the hot blanket pack to produce dilatation of the cutaneous vessels and then follows this by a cold wet hand rub or by placing the child in a sheet rung out of cold water, with the addition of a blanket to prevent chilling of the patient. In case of persistent vomiting the use of gastric lavage and the application of an ice-bag over the stomach is recommended; for the control of frequency of stools the use of an enema at 105° to 110° F. following each stool; also the use of fomentations to the abdomen for 10 to 15 minutes every two or three hours, followed by the application of a heating compress consisting of a towel or cheesecloth wet in cold water and covered by two or three thicknesses of flannel. During convalescence it is better generally to stop all treatment with reference to the bowels and to direct our efforts to general tonic measures.

How to Disguise the Taste of Castor Oil.

A number of suggestions regarding the best means of rendering castor oil palatable appeared in several numbers of the *Practicheskie Vratch.* One is to keep the nostrils tightly closed while the oil is being taken. The other is to rinse the mouth with cream before taking the oil. Still another is the following: Pour into a small glass a teaspoonful of glycerine, then a teaspoonful of rum or strong sweet wine, followed by the castor oil, which is covered with a little lemon juice. The whole is swallowed at once. Only the taste of the lemon and the rum is perceived.—*Thera. Monthly.*

SERUM THERAPY IN LARYNGEAL DIPHTHERIA.*

By Adolph O. Pfingst, M.D.,
Louisville, Ky.

MEMBRANOUS croup of the older writers is now generally designated "laryngeal diphtheria." It is in this primary laryngeal form of diphtheria, until recently the most dreaded and fatal of the affections of childhood, that antitoxin has achieved its greatest success. But also in the faucial variety, with secondary laryngeal invasion, the serum treatment has been of inestimable value.

Although it is my purpose today more especially to point out the influence of antitoxin in laryngeal diphtheria, I will ask you to bear with me for a brief resumé of some important statistics bearing on diphtheria in general. By applying to the health boards of the larger cities of the United States, Canada and England, I have, through the kindness of health officers, obtained some valuable and interesting figures. German statistics are taken from hospital reports. It is to be noted that, without an exception, the decrease in the death-rate began soon after introduction of serum therapy and that it has continued steadily. I will not cite all of the figures at my command but will confine myself to those most complete.

The greatest reduction in the death-rate after the introduction of antitoxin is reported from Chicago. From an annual mortality rate of 41.96 per cent. of cases in the period of five years before the use of serum treatment, the death-rate was reduced to 6.79 per cent. in the five years following, during which 5,727 were treated with antitoxin. The least reduction was recorded in Glasgow, Scotland, where diphtheria is comparatively a rare disease. In the last six years of the pre-antitoxin period 42.2 per cent. of cases of diphtheria died, in the six subsequent years the death-rate in 1,212 cases reported was 21.6 per cent. In Sheffield, England, the best year since the antitoxin has been in use (1901) gives a death-rate of 15.96 per cent. Dr. John Robertson, the medical health officer of

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* Read before the Kentucky State Medical Society, at Paducah, Ky., May, 1902.

Sheffield, has, in a personal letter, expressed the belief that the less favorable results in England from the serum therapy can be attributed largely to a certain timidity on the part of the profession of England in adopting the new treatment. He stated that the treatment was not adopted in Sheffield until 1897, and that since then the mortality rate, which has ranged from 35 to 43.5 per cent., has been gradually reduced until in the last year it was only 15.96 per cent. in 1,596 cases. This, however, included all cases irrespective of the manner of treatment, and as antitoxin had been administered in but 45 per cent. of the cases it is in fair proportion to our American records. In Edinburg the mortality rate for 1901 of over 1,000 cases was 18 per cent.—manner of treatment not specified. Briefly glancing at the reports of several American cities, we find St. Louis with a death-rate of 35.46 per cent. for six years before the antitoxin period and 15.76 per cent. for the six following years. Of the latter, which included 13,593 cases, 2347 were given antitoxin and only 8.75 per cent. of these died, though the majority of the cases were among the poor and imperfectly fed, many of whom were of low vitality. Similar records from Newark, N.J., give a mortality of 15.4 per cent. of all cases, 7,157 in number, in six years of antitoxin treatment and less than 9 per cent. in those treated with antitoxin. The figures from the Health Board of New York City correspond with the foregoing. The mortality rate for five years prior to the use of antitoxin was 28.03 per cent. for the same period since then including 62,902 cases 14.3 per cent. To judge accurately and intelligently of the real value of the serum therapy a comparison should be made of cases treated with and without it. Most health boards have been unable to obtain such reports. Boston, for instance, gives an average mortality of 10.5 per cent. of 10,001 cases, and Buffalo 17.5 per cent. of 5,830 cases reported in the last six years. Washington 11.85 per cent. of 675 cases; Baltimore 8.8 per cent. of over 1,000 cases; Minneapolis 10.2 of 1,863 cases, and San Francisco 12.74 of 383 cases for the last year. All cases were included in these reports without reference to any special treatment. In Washington record was kept by the health board of the manner of treatment for seven months. But 3.8 per cent. of the 211 cases treated with antitoxin died, while the death-rate in the 190 children treated by other means was 34.2. In Newark 4,283 cases were treated with antitoxin with a death-rate of 10.02; 2,904 were treated without it with a death-rate of 20.35 per cent. In all of these cities the mortality in the pre-antitoxin period ranged from 28.5 to 42 per cent. Dr. M. K. Allen has recently made a careful investigation of 402 cases reported in Louisville in four months of last year, the results of which he published in the April issue of *The Practitioner and News.* Antitoxin was used in all but 59 cases with a death-rate of 6.8 per cent. In the cases not treated with antitoxin the mortality rate was 22 per cent. In Germany a summary of over 100,000 cases, gathered by Dr. F. Siegert from reports of all of the leading hospitals of that country show an average mortality of 41.5 per cent. in the four years previous to the employment of antitoxin and an average of 16.4 per cent. in the four subsequent years. As the mild cases are not often sent to the hospitals these figures include mostly severe cases.

The more the pseudo-diphtheritis-bacillus is studied the more convincing are the results that it is the same as the Klebs-Loeffler bacillus. Its morphological and cultural characteristics are the same, the only difference between the two being the absence of the poisonous by-product in the pseudobacillus. Knowing this, too much reliance should not be placed in the bacteriological diagnosis of diphtheria, especially in the rapid diagnosis in 24-36 hours. The presence of the pseudo-membrane should be recognized as the most important symptom of diphtheria. However we know also that exceptionally there may be a pronounced pseudo-membrane without the presence of the diphtheria bacillus. These cases which are often met with during the common infectious diseases of childhood are due to an infection by the pyogenic cocci. They run the same clinical course as the others failing, however, to respond to treatment with diphtheria antitoxin.

I believe that the results of diphtheria treatment would be still better were it not for these cases in which we have to deal with complication of the staphylococcus and the streptococcus. We know that in cases of mixed infection there is a tendency to involvement of greater areas and that the combination of the toxic effect of the diphtheria bacillus with the septic infection is more apt to lead to a fatal termination than a simple infection.

From the latest report of the Public Health Department of San Francisco I note that for two years in which complete records were kept the mortality was 10.6 per cent. in simple diphtheria while in the cases in which the microscope also revealed staphylococci or streptococci, the mortality rate was 16.9 per cent.

In laryngeal diphtheria our main diagnostic guide is the clinical course of the disease characterized by symptoms referable to the larynx, viz., the characteristic cough, hoarseness and symptoms of stenosis. These cases cannot so easily be mistaken for other conditions, certainly not as frequently as simple tonsillitis and diphtheria are mistaken one for the other. The statistics of laryngeal diphtheria therefore appear to me more convincing than those of the faucial variety. Among the cases reported as faucial or tonsillar diphtheria are included, as we have seen, many cases which formerly went on record as simple tonsillitis. That this accounts partly for the reduction in the mortality of diphtheria is evident. Yet it does not make as great a difference as the increase in number of cases reported would indicate.

In the Boston statistics, where the disease was classified into positive and negative cases accordingly as a bacteriological diagnosis had been made or not, the death-rate in the former was 9.4 per cent., in the latter 10.4 per cent. Statistics uniformly show an almost marvelons reduction in the mortality of the laryngeal cases of diphtheria. This disease has in fact been so modified by the serum treatment that it is now almost entirely within our control. Not only has the mortality been lowered but the necessity of operative interference has been materially lessened. In the preantitoxin period about 90 per cent. of laryngeal cases required intubation,—compared to 35 per cent. since the introduction of antitoxin.

In considering the advances made in the treatment of diphtheria in the last ten years, the relief of laryngeal stenosis through intubation should be credited with part of the success in the management of this disease. In many neglected cases not seen by the physician until the larynx is involved and also in primary pharyngeal cases intubation often becomes necessary to relieve the stenosis and to avert impending death until the effect of the antitoxin can be obtained. O'Dwyer introduced this brilliant surgical procedure in 1885 but its employment did not become general for several years, in fact the European physicians have only in the last few years been taking it up and even now there is a preponderance of tracheotomy over intubation. After the value of intubation became recognized the mortality in "membranous croup" was lowered from about 90 per cent. to about 65 per cent. Since intubation has been supplemented by antitoxin the death-rate has been so lowered that the former percentage of recoveries, 10 to 15 per cent. now almost represents the death-rate. As a consequence statistics no longer note the number of recoveries as heretofore but now record the percentage of deaths. A remedy with such results may almost be considered specific and we cannot fail to see in it one of the greatest contributions to medical science and a triumph for bacteriological research. The antagonists of the serum therapy, of which there were many, have diminished rapidly until to-day it is practiced almost universally. In most of the health reports the mortality in the laryngeal cases is still over 20 per cent., St. Louis showing a mortality rate of 28.26 per cent. in 322 cases and the last report of the American Pediatric Society 27.2 per cent. in 1,704 cases. Private statistics of such reliable men as Rosenthal, of Philadelphia, Shurley, of Detroit, and others show much better results the former 13⅓ per cent. of 100 cases, the latter 16.1 per cent. of over 100 cases.

The high rate of mortality can, in the laryngeal cases, I believe, be attributed principally to the fact that many of these cases are neglected until after stenosis has taken place and the children have lost their power of resistance. This is especially true in the primary laryngeal affections.

The following case is worthy of a brief report as it illustrates the value of intubation in connection with the serum therapy. In August, 1901, a girl of five years was seen in consultation. The child had been sick with a cold, as the mother said, for six days, which had just in the last few hours extended to the lungs. When the attending physician saw the child all evidences of laryngeal diphtheria were present and he urged an immediate operation. When I saw the patient there were evidences of diphtheria on both tonsils. She was breathing with great difficulty, retraction of the suprasternal region and ribs being marked on inspiration. The face was cyanotic. As soon as the tube was inserted she became easy, the cyanosis disappeared and after an injection of 2000 units of antitoxin she passed into an easy sleep which lasted for four hours. As the faucial membrane showed no change in ten hours I repeated the injection of 2000 units antitoxin. In the meanwhile stimulation with whiskey and strychnine was resorted to. Five hours after the second injection breathing suddenly became obstructed and the child again became cyanosed. Removal of the tube revealed partial plugging of its lumen. A few moments later the child in a paroxysm of coughing expectorated bronchial casts of the diphtheritic membrane. Although breathing seemed easy the tube was reinserted. The child made a good recovery, the tube being removed on the fifth day.

In the matter of dosage I am guided by the recommendation of the committee of the American Pediatric Society, which investigated the subject of diphtheria and antitoxin treatment. I quote from the report as follows: "All cases of laryngeal diphtheria, the patient being two years old or over, should receive, first dose, 2,000 units at the earliest possible moment. Second dose, 2,000 units 12 to 18 hours after the first dose if there is no improvement in the symptoms; third dose, 2,000 units 24 hours after the second dose if there is no improvement in the symptoms. Patients under two years of age should receive 1,000 to 1,500 units, the dose to be repeated as above."

The tendency in the last year has been to give larger doses. While I have myself given injections of 3,000 to 4,000 units in children under seven or eight years, I believe that it is of greater importance to repeat the dose at shorter intervals than to give larger doses. It is bad policy to procrastinate with the repetition of the doses if improvement is not noticed in about ten hours.

There has been so much written about the preparation of the diphtheritic serum, the computation of its units, strength and manner of its employment, that these details are familiar to every physician. The point of greatest obscurity today in connection with diphtheria is the difference between individuals in their susceptibility to the disease. Neisser, Wasserman and others have shown that the blood of the majority of individuals, including those who had never had diphtheria, contains a certain amount of antitoxin which protects the body to a greater or less extent against the invasion of the diphtheria bacillus. As the blood of the new-born is free of antitoxin, this immunity is believed to be an acquired condition either naturally or artificially. It increases with the age of the individual, which accounts for the lessened susceptibility or almost complete immunity in adult life.

It is now a unitarian view among bacteriologists that the so-called pseudodiphtheria bacillus is identical with the Klebs-Loeffler bacillus. Behring (Bibliothek von Keller Bd. 2) has recently advocated a new theory regarding the natural acquisition of immunity to diphtheria in that the pseudo-diphtheria bacillus, or rather the non-virulent Klebs-Loeffler bacillus while residing in the mucous membrane not only produces toxins but also antitoxins in certain proportion. He believes that the non-virulent bacillus which is universally distributed and may be harbored on the mucous membrane of any individual, is continually producing antitoxin which finds its way into the circulation. By this continuous action and the absorption of bacterial products an insusceptibility results, which is more prolonged or continuous than the immunity following an attack of diphtheria. The latter, though more absolute, has a limited time.

Contrary to most infectious diseases, the period of immunity following an attack of diphtheria is very short, the protecting bodies being rapidly eliminated from the system. It has been variously placed at 12 weeks. Relative to this question Prof. Karl Fraenkel, of Halle, in a recent letter, states that immunity after an attack of diphtheria and also after the injection of antitoxin lasts from four to six weeks. The immunity artificially acquired through the introduction of antitoxin into the system can, by increasing the serum according to demand, be made more absolute though not more lasting than the natural form.

It is now the accepted view that antitoxin acts by stimulating the tissue cells, establishing in them a tolerance of the toxins. Although it has this same action at all stages of the disease its therapeutic value is greatest at its onset. Statistics show that the lowest death-rate in diphtheria occurred in those children who were injected on the first day of the disease, and that with every day of delay there was an increase in the mortality rate. Very excellent results have also been reported from antitoxin as a preventative measure. Behring reported 100,000 cases in which the serum treatment was employed as a preventative in which only ten cases of diphtheria developed although many of the children had been exposed to the infection. The New York State Board of Health has on record 160,000 cases in which antitoxin was used as a prophylactic measure, among whom 79 cases of diphtheria developed, mostly of a mild type. This observation has led to the adoption of prophylactic injections as a precautionary measure in many hospitals and orphan asylums during the prevalence of epidemics of diphtheria. After the disease has developed the cells are weakened by the prolonged toxic action and cease to respond with the same activity to the action of the antitoxin. Notwithstanding this, statistics show that even in neglected cases when injected late the mortality rate has been lowered by the use of the serum therapy. In doubtful cases it is, I believe, poor policy to postpone treatment in order to be able to confirm the diagnosis. Treatment should be resorted to at once, as the observation of the leading authorities on diphtheria has been that the serum is innocuous even when used in very large doses.

Post-diphtheritic paralysis, edema of the joints, albuminuria, and other sequelæ of diphtheria have, especially by the laity, been attributed to the remedy employed instead of the diphtheritic poison. It may be that the absolute number of cases of the post-diphtheritic paralyses is greater than formerly, but this can easily be accounted for in the greater number of recoveries than formerly. Relative to this point, McFarland very correctly says that "paralyses following the use of antitoxin are due to the agent only in so far as it saves the patient from death."

The health boards of our larger cities have in the last years prepared their own anti-diphtheritic serum for distribution among the poor. Otherwise we obtain it from the large manufacturing pharmacists.

Before closing I would add just a word as to other treatment, for I believe that since the employment of antitoxin has become universal other important measures are not given the place that they deserve. A brisk calomel purge to empty the alimentary tract, local antiseptic solutions (Loeffler's and others) in faucial cases, steam inhalations in laryngeal cases and heart stimulants to meet indications, are indispensable auxiliaries to the treatment of diphtheria.

CORRESPONDENCE.

June 15, 1902.
65 East 90th St., New York.

To the Editor of PEDIATRICS:

DEAR SIR.—In your esteemed journal of June 15th I read under New York Academy of Medicine—Section on Pediatrics, Stated Meeting, April 10, 1901.

"**Sarcoma of the Lung.**—Dr. LOUIS FISCHER reported a case of this kind occurring in a child, and presented a microscopical specimen from the tumor." He said that the tumor occupied the site normally occupied by the heart and that the chief clinical features had been rapid, irregular and sighing respiration, a temperature of a little over 100° F., constant and severe dyspnea, more or less cyanosis, pallor of the mucous membranes and rapid emaciation. There was also a lateral curvature of the spine, from left to right, in the dorsal region".

May I ask you to add that:—

The heart has been pushed to the right side and occupies the right axilla. The apex beat is heard about two finger's breadth below and to the right of the *right nipple.*

The case was hopeless from a medical standpoint as the growth was constantly increasing.

The family history is also very interesting:—The father of the child and the mother were apparently normal. The grandfather, however, died from a sarcoma—so that the association of the sarcoma in grandfather and grandchild is certainly noteworthy.

These points I deem very important and hence crave your indulgence for tresspasssing on your valuable space.

Most respectfully,

LOUIS FISCHER.

SOCIETY REPORTS

NEW YORK ACADEMY OF MEDICINE--SECTION ON PEDIATRICS.

Stated Meeting May 8, 1902.

R. G. Freeman, M.D., Chairman.

A Case of Acute Leukemia.—Dr. Sara Welt-Kakels reported this case, which occurred in a child of 18 months. The case had been first seen on October 14, 1901, when the mother stated that one month previously she had first noticed that the child was growing very pale and that pus and blood were occasionally discharged from the bowel. Examination showed a striking pallor of the skin, the absence of any evidence of rachitis, the presence of numerous purpuric spots on the body and extremities, enlargement of the glands of the post-cervical, axillary and inguinal regions, bleeding gums and fetor of the breath. The buccal muccus membrane was inflamed; soft, blowing systolic murmurs could be heard over both the base and the apex of the heart; the spleen extended 1½ inch below the free border of the ribs. The rectal temperature was 101° F. Examination of the blood showed the proportion of red to white corpuscles to be 1 to 3,and the enormous number of 682,000 leucocytes to the cubic millimeter. It was also worthy of note that the lymphocytes represented 94 per cent. and that, contrary to the general rule,the small variety was three times more numerous than the large. The urine was slightly albuminous, but contained neither sugar nor blood. On October 18th the child became comatose and died; no autopsy was permitted. Dr. Welt-Kakels said that she had found on record 24 cases of acute leukemia occurring in children under the age of ten years. The term acute should be applied, not so much because of the short duration as because of the suddenness of onset and the early occurrence of hemorrhages. Fraenkel was of the opinion that the mouth and nose were the favorite portals of infection. The prognosis was hopeless, death resulting from secondary infection and sepsis, from the asthenia produced by the hemorrhages or from coma arising from hemorrhages into the brain or meninges.

Dr. Charles Herman remarked that in a recently reported case there had existed an enormous thymus gland, and that this affection presented conditions analagous to those found in persons of the lymphatic constitution.

Etiology and Prophylaxis of Summer Diarrhea in Infancy.—Dr. H. Heiman read a paper on this subject. He said that there was an intimate relation between this disease and the presence of bacteria, and that the term summer diarrhea was evidently a misnomer. Many microörganisms were found normally in the bowel; indeed some of them performed a physiological function in aiding digestion by the splitting up of certain compounds. Under special conditions it was conceivable that some of these intestinal bacteria might become virulent and lead to pathological processes. He preferred to divide these diarrheas into two varieties, i.e., the infectious and the non-infectious, subdividing the first group into inflammatory and non-inflammatory. Hot humid weather was distinctly favorable to intestinal putrefaction and so favored the occurrence of summer diarrhea, but of all the etiological factors the most important was faulty feeding. This applied both to bottle-fed infants and those at the breast. A good preventive in hot weather was to diminish the quantity of food, substituting for part of the proteids and fat boiled water and a cereal. The building of better tenement houses and providing more parks and other open spaces would contribute materially to reduce the number of cases of summer diarrhea. This disease was shown by his dispensary records to be on the decrease and this he believed was the result of a better knowledge of the feeding of infants.

Renal Complications of Summer Diarrhea of Infancy.—Dr. J. Lovett Morse, of Boston, was the author of this paper. He stated that degenerative lesions of the kidney of a granular type were quite common in connection with infantile summer diarrhea, the tubules containing casts of various sorts. Fatty degeneration was usually found only in the chronic cases and glomerular changes and microörganisms were rare. The alterations in the kidneys were therefore chiefly those of a degenerative type and presented nothing characteristic. The urine was usually diminished in quantity and slightly albuminous and contained an excess of uric acid or urates. He had been unable to discover any relation between the albuminuria and the symptoms present, though Koplik asserted that this form of nephritis was associated with restlessness, persistent vomiting and edema of the lower extremities. Holt had made the statement that he had seen only one autopsy in which there had been enough nephritis to contribute in any way to the fatal termination. A mild form of pyelitis and pyelonephritis was sometimes observed in these cases of diarrhea as a result of an infection with the colon bacillus, but it did not influence the prognosis.

Treatment of Summer Diarrhea of Infancy.—Dr. C. G. Kerley presented this paper. He said that as the physician had a poisoned child to treat the indications were clear. Every case, no matter whether mild or severe, should receive an initial purge of castor oil or calomel, preferably the former, and regardless of the source of the milk it should be stopped at once. Milk is a good culture medium for bacteria, and hence there was nothing gained by diluting the milk or pasteurizing or sterilizing it. As a substitute diet one of carbohydrates was to be preferred, but as the children soon tire of this its taste should be varied by adding small quantities of beef-juice, beef-broth, chicken broth or mutton broth. How ever these must be used very sparingly, as in some children they tend to produce diarrhea. It was a mistake to make free use of brandy or whiskey in these cases, for these still further weakened the already enfeebled digestive organs and irritated the kidneys. He had tried egg-albumen water, but had given it up because it was often not well digested and recovery was retarded by its use. The substitute carbohydrate diet should be given every two hours and in the same quantity as milk had been previously given. Boiled water might be given freely at any time. It was important to keep the sick child in a large and airy room and not to resume the milk till the fever had gone and the stools had become normal, and then to return to milk diet very gradually and cautiously. He had found the subnitrate of bismuth useful, but unless given in doses of 10 to 20 grains every hour or two, in other words, in sufficient quantity to cause black stools, it had but little effect. Opium should be used with great caution and never unless there were more than four or five stools a day, as this number was needed for intestinal drainage. The best form was Dover's powder, of which ¼ to ½ grain should be given every three or four hours to a child one year old. Where a heart stimulant was indicated he preferred to use strychnine and strophanthus. If the stools contained much blood and mucus, irrigation of the colon would be found useful; otherwise it only served to increase the rectal irritation. Normal salt solution should be used for the irrigation and it should be administered through an ordinary rectal tube of soft rubber (No. 17 American scale), the reservoir for the solution being not more than 3 feet above the body of the child. For ordinary purposes the solution should be lukewarm. but if there were much fever this could be reduced by using the irrigation at a temperature of 70° F. On the other hand, where collapse was imminent, the saline solution should have a temperature of about 110° F.

Dr. W. L. Stowell said that he had never found it necessary to pay any special attention to renal complications occurring in connection with infantile summer diarrhea. The statistics for the past three years at the Demilt Dispensary showed that summer diarrhea was on the wane and that the cases that did occur were of a milder type than in previous years. He was accustomed to prescribe intestinal antiseptics, such as salol, and to use rectal irriagtion, not only for the purpose of removing irritating matter but because of the constitutional effect that could be produced in this way, as hinted at in the closing remarks made by Dr. Kerley. Drugs played a very subordinate part.

Dr. B. Van Doren Hedges, of Plainfield, N. J., spoke of the baneful results of chronic distention of the stomach by giving children food in inordinate quantities. The treatment advocated by Dr. Kerley was most sound, but personally he was very chary of giving opium to children unless they could be very carefully watched. In no case should opium be kept up if along with the diminished number of stools there was no improvement in their character. This could only be determined by a personal inspection of the stools, and this was an important part of the physician's duty.

Dr. W. L. Carr said that in some cases presenting renal complications his attention had been attracted by the presence of vomiting, a very rapid pulse and dyspnea. Edema was not usually observed except in protracted or intermittent cases. The albuminuria was very slight, and indeed, the general mildness of the kidney complication explained the frequency with which it was overlooked. He had practically abandoned the internal administration of so-called intestinal antiseptics, and believed the children did just as well if treated according to the plan laid down in Dr. Kerley's paper.

Dr. L. E. Lafetra spoke of a rare case in which there had been a local instead of a general intestinal intoxication. This had apparently been brought about by paralysis of the intestine and the case had terminated fatally.

Dr. E. Libman's experience with the kidney complications had been very similar to that of Dr. Morse. He had observed usually a parenchymatous degeneration of the kidneys. Probably such cases were more marked in the old days when the treatment by opium and astringents held sway, because under such medication the elimination of toxins was materially interfered with. Dr. Libman made a plea for an attempt at least at a scientific classification of the infantile diarrheas. Certainly, he said, there was no difficulty in separating two classes—the streptococcus and the pyocyaneus cases, and this should be done even if such a classification did not in any way affect the treatment.

Dr. J. F. Bell, of Englewood, N. J., described an epidemic of infantile diarrhea that he had witnessed in Easthampton, L. I., during the summers of 1899 and 1900. The cases were very severe and were characterized by high fever, convulsions, vomiting and a high mortality. Bacteriological examination of the stools revealed the presence of streptococci, and as there was an unusual number of relapses on resuming milk diet, attention had been directed to the milk supply. It was found that many of the cows supplying milk to these children had an eruption on the teats and udders, and a culture from one of the pustules showed staphylococci and streptococci. Dr. E. F. Brush had been asked to see these cows and had pronounced the disease cowpox. There had been an almost immediate cessation of the epidemic on quarantining the diseased cows and procuring milk from healthy cows. A similar outbreak had occurred in the neighboring manufacturing town of Sag Harbor.

Dr. W. L. Baner spoke in terms of high commendation of the treatment as outlined by Dr. Kerley. His own preference was for sulphate of sodium rather than bismuth, and he prescribed it in doses of 15 grains every three or four hours to a child a year old.

Dr. J. J. WALSH decried the prevalent notion that salol and various coal-tar preparations supposed to inhibit the activity of the germs in the intestine must be prescribed in these cases. An excellent prophylactic against summer diarrhea during very hot weather was the frequent bathing of children or allowing them to play in a bath for a considerable time.

Dr. MORSE suggested that summer diarrheas, or what he preferred to call the acute enteric diseases of infancy, be roughly classified as follows: (1) A class in which there was merely simple diarrhea or increased peristalsis; (2) a class in which there were organic changes; and (3) a class in which there might or might not be organic changes. The third class included the great bulk of all cases. While milk should certainly be prohibited for a short time, he believed it could be resumed sooner than Dr. Kerley seemed to think. Brandy and whiskey were contraindicated and opium should only be used where there was undue peristalsis. In the latter class such astringents as tannigen and tannalbin were also very useful. Rectal irrigation had been very much overdone; it was applicable to a comparatively small number of cases. The subcutaneous injection of saline solution was most useful in the very severe forms of infantile summer diarrhea.

Dr. KERLEY remarked that as salol was not beneficial, and almost always disturbed the stomach, it should be avoided.

Dr. R. G. FREEMAN said that the physicians working in the New York Foundling Hospital had never been greatly impressed with the value of bismuth in these diarrheas under discussion, but since they had been making use of bismuth associated with two or three drops of castor oil they had obtained satisfactory results from this combination.

ABSTRACTS

ELBOW FRACTURES IN CHILDREN.

(*Continued*).

F. J. Cotton (*Ann. Surg.*, Feb. 1902).—Supracondylar Fractures.—This form of fracture, one of the commoner forms, has been theoretically divided into the fractures by extension and those of the so-called flexion type. This division comes from Kocher, and, so far as his writings show, has no other than an experimental basis.

From a few cases of the author's, from Kocher's own statements, from Mouchet's X-ray plates, etc., it is safe to say that the "extension" type, oblique upward and backward, is present in the majority of cases. It is indeed an open question whether there is good evidence of the reverse obliquity in any single case.

As to displacement, this seems to be almost universally a backward displacement of the lower fragment. Such few specimens as exist usually show this, as do the published X-rays, but here, for once, the evidence of the great bulk of clinical reports resting on manual examination is the best available evidence. Evidently, anterior displacement, with or without obliquity of the fracture line up and forward, is, except as an "arte fact," a rarity. The only good clinical case the writer has seen reported is one of which Poland gives a skiagraph. Where anterior displacement does occur, it is accompanied by forward and upward rotation. Conversely a backward and upward rotation is conspicuous and constant where uncorrected backward displacement exists. This rotation may be considerable in extent.

Outward and inward displacement are of secondary importance, not usual, rarely considerable. Rotation to either side in this plane hardly occurs except as a result of treatment; uncorrected, it is the cause of the gunstock deformity.

There is, however, a rotation of the lower fragment (or rather of the shaft outward) on a vertical axis which may be an important obstacle to proper reduction.

There may be, of course, no displacement at all, but a simple subperiosteal fracture.

As to the mechanism of these fractures, Stimson found them occurring as the equivalent of epiphyseal separation in ab- and adduction; Kocher produced them by hyperextension, by flexion and forward thrust, by outward rotation of the arm, or by a blow on the hand with the elbow flexed and fixed. (So also in the writer's experiments). Kocher thinks, however, that the injury probably results clinically from a fall on the elbow or on the hand; in the latter case rotation may play a part.

It is certain, from the cases recorded, that either a fall on the hand or on the flexed elbow *may* produce this form of fracture.

T- and Y-Fractures.—No examples of this form of fracture are included in the writer's series. Evidently this fracture is rare in children. There seems to be but one anatomical specimen, that figured by Scudder, a T-fracture following the epiphyseal lines almost exactly, with only partial separation.

Mouchet reports a case of T-fracture, confirmed by the X-ray and by a later operation, in a child of six years. Neither Kocher nor Poland give any cases in children.

All of the many specimens on which the description of this supposedly frequent fracture is based are from adults; of these every museum has several examples. The fact of the rarity of this fracture in children seems to have been generally ignored. The actual condition is well put by Deaver in a recent article, where he writes: "It is interesting to observe that in all the radiographs of fractures about the elbow we have taken, but one of T-fracture has been met with. All the text-books upon surgery describe such a fracture, but do not speak of it as being rare. From our studies in this line of work we would say that this is not a very common fracture." Certainly this seems true as regards children; the fracture is not only not very common, but definitely rare.

Fracture of the Internal Condyle (so-called internal condyle into the joint).—The writer has seen no case in a child of fracture of the internal condyle in which the trochlear surface was involved. (This, and not the tearing of the capsule, which may occur with epicondylar fracture, is evidently what is usually meant by fracture into the joint.")

This fracture, apparently not uncommon in the adult, is evidently a rarity in the child.

Fractures of the Internal Epicondyle.—These injuries are, as will appear, nearly always pure separations of the epitrochlear epiphysis, involving or not involving the joint cavity, largely according as they occur at an age when the epitrochlea is still a part of the general epiphyseal cap, or later, when it is in no direct relation to the other epiphyses or to the capsule. The severity of the trauma and the extent of displacement must also, of course, be important in determining the injury to the joint.

As to the implication of the joint in these separations, Kocher's series of operated cases is interesting. Of three cases where this point is determined and definitely noted at operation, there was but one case where the joint capsule was torn open. This was in a child of seven years; the others, with the joint intact, were aged one fourteen or fifteen years, the other seventeen years. This is in exact accord with the anatomical fact that the capsule after the age of thirteen or thereabouts does not extend up as far as the epitrochlea.

It must not be forgotten, however, that this injury may accompany a dislocation of the elbow; then the joint capsule must be torn open.

As to displacement, this is in the great majority of recorded cases downward, usually downward and forward. So it was in the writer's three cases.

As to mechanism, the histories of recorded cases seem to show that the injuries may be a result of (1) direct violence; (2) muscular action; (3) as an equivalent of rupture of the internal lateral ligament; (*a*) in luxation; (*b*) in abduction.

The causation by abduction is perhaps open to question, though Berthomier produced it experimentally on the cadaver.

The separation of this epiphysis is, judging by clinical reports, a not infrequent accompaniment of backward luxation. The ease of luxation, when this process has given way, is of interest in this connection. Kocher writes that he produced luxation in two cases that presented only the epitrochlear fracture on entrance; the luxations were produced accidentally while demonstrating the cases.

Of special interest in regard to this lesion is the injury of the ulnar nerve which frequently results from it. As a rule, this nerve lesion is a primary one to the trauma of the fracture, less usually due to callus. Some writers have reported cases where excision of the fragment was done for relief of nerve symptoms. As a rule, the cases, with or without operation, have finally terminated favorably.

Fracture of the Trochlea Alone.—This fracture, included in some of the classifications, is introduced only to dismiss it.

Fracture of the Capitellum (*fractura capituli humeri partialis*).—The writer not met with this lesion. This fracture, first described by Hahn, is a rare but well attested lesion. Of Kocher's four cases three were at nineteen, nineteen and seventeen years of age, respectively. The fourth case, however, was in a boy of fourteen. It was, like the rest, a separation of the articular surface of the capitellum, giving a free or nearly free body in the joint, palpable posteriorly, with the characteristic limitation of extension and supination without hindrance to other motions. This fragment in this, as in Kocher's other cases, was excised with a practically perfect result.

Fracture of the External Epicondyle.—The writer has seen no case,

All of the definitely determined specimens are from adults. It seems that this lesion may at times accompany a backward luxation of the forearm; but up to date the only evidence to support this seems to be the fact that Fischer has so produced the fracture experimentally, and that cases have been reported by Magnan and Wolff, when this was apparently the lesion present.

Occurrence.—These, then, are the lesions occurring in elbow fractures in children. Three classes serve to include all but the exceptional cases.

To sum up as regards frequency of occurrence, the writer's series gives external condyle, 16; "bicondylar" fracture or epiphyseal separation, none; supracondylar, 13; epitrochlear, 3.

This proportion agrees fairly with the results of the only other available series controlled by X-rays—Mouchet's. He gives external condyle, 39; supracondylar, 37; epitrochloar, 22.

Kocher, whose series was not controlled by X-rays, but is none the less very careful and includes a number of cases verified by operation, also puts the external condylar fractures in the first place,—14 cases as against 12 supracondylar, and 6 epitrochlear fractures.

Evidently these three forms of fracture are common, especially the supracondylar and that of the external condyle. The more careful lists show apparently that separations of the whole epiphysis are at least less common than has sometimes been asserted.

Fractures of the external epicondyle or of the capitellum are so rare, at least in children, as hardly to deserve notice.

As to T-fractures, they are evidently infrequent. There is no doubt that the lesion is a not uncommon one in adults; every museum has several specimens to show this. A series of cases recorded by Ray, nearly all in adult railroad employees, shows 10 T- or Y-fractures out of a total of 78.

As to fracture of the internal condyle, it is true that various series show an apparent frequency of this form of fracture; for instance, the series of Allis and of Fowler, already cited, that of Powers (12 internal condylar and 15 external condylar out of a total of 50), or a recent article by Careton which assigns first place in point of frequency to this form. The writer can only reiterate that he believes such classification to be mistaken; in part it is no doubt a result of confusion (in word or in idea) between the epitrochlear and the supposed internal condylar fractures (so-called fractures of the internal condyle not involving, or involving, the joint); in part, doubtless, the result of the general geometric rather than pathological classifications of the text-books. Not only has the writer not met with this fracture, but he submits that the pathological data and the skiagraphs published to date sustain the contention that fractures of the internal condyle, including the trochlea, occur in children only as an exceptional lesion.

The injuries which make up nearly all the total fractures of the humerus at the elbow, the lesions each one of us may expect to find, are (1) of the external condyle; (2) supracondylar fractures (or total epiphyseal separation); (3) of the epitrochlear.

Course of Repair.—In the present series the results were tabulated to show the time required to regain an arc of 90° of motion (that is about two-thirds the normal motion, for flexion is hardly over 45°). The notes of 26 of the cases gave data for this, and showed that this took, on the average, the surprisingly long time of 53 days. There was an extreme variation from case to case.—some gaining motion within a few days of the removal of the apparatus whenever that occurred, others (and these were cases which later regained full motion) showing a limitation of motion which persisted three months or more.

The most obvious important factor in relation to early recovery seems to be that of age. Of the 26 cases, in 17 occurring after five years of age, the average time required to regain the 90° arc of motion was 64 days; the 9 cases of five years and under required on an average but 35 days. This difference is sufficiently striking to offset the fact that the injuries in these younger cases usually involved somewhat less tearing and hemorrhage about the joint.

As to the matter of mobilization, those cases (11 in number) treated without massage or passive motion required an average of 53 days from the time of injury to regain the desired 90° motion: those in which massage was begun in the third or fourth week (3 in number) required 56 days; those where it was deferred till later (12 in all) required but 43 days.

In watching the massage treatment as carried out on the present series, two facts were striking.

The first was the ease with which massage and even the gentlest passive motion may stir up joint rigidity instead of decreasing it. This was not a result of rough handling; forced passive motion was not used, and the manipulations were given by a skilful masseuse under the writer's supervision. It would certainly seem that massage so used is not, to say the least, very effective as a means of diminishing spasm and rigidity; and the writer's general impression is that it is fully as likely to do harm as good before the fourth week at earliest.

The other point is that the muscular tension, here as in joint disease, is evidently the cause of limitation of motion and is not a shortening of the muscle but a simple muscular spasm. This is evident from the way in which the arm reacts when the angle of retention is changed. In the cases where acute flexion has been used, if we wait until the arm can readily be extended to a right angle and then apply an internal angular splint, we find in the course of the next few days not any considerable increase in range of motion, but a shifting of the arc of motion. Increased extension is possible but is accompanied by a loss of flexion range. In other words, the muscles, though still retaining their spasm as before, have adapted their length to the fresh conditions.

As to the rapidity of recovery according to the different lesions, the fractures of the external condyle required an average of 47 days to regain the 90° arc of motion, the supracondylar cases, 50 days.

All the cases of which the notes give data on this point recovered pro- and supination motion earlier than flexion and extension, and in no case was there any permanent limitation of pronation or of supination.

As to the rapidity of union according to the different lesions, it is, of course unwise to be too curious about this point in examining elbow fractures; and the data show only that slow union was noted in three of the external condylar fractures, in one supracondylar fracture (rather unusually high above the joint), and in both the epitrochlear separations, of which the notes are at hand.

ENLARGED BRONCHIAL LYMPH NODES IN CHILDREN.

A. Friedlander (*Arch. of Ped.*, April 1902) says: The lymph nodes of the body constitute an apparatus, not only for filtration, but also for rendering innocuous the most varied kinds of virus. We find that these lymph nodes are continually called upon to resist the further spread of all the local irritations and inflammations to which the organism is subjected. And further, in the discharge of this function, the lymph nodes themselves react, by irritation or inflammation, as in the case of an infected finger, and there ensues a lymphangitis and adenitis. If the original infection be not too intense the filter system holds the poison localized and the general infection occurs only when this particular filter is no longer able to absorb, *i.e.*, to render innocuous the bacterial toxins. Thus the lymph nodes along the respiratory tract act as a protective wall against the further penetration of all kinds of matter, including the microörganisms.

During early life growth is especially active, and at the same time the resistive powers of the organism are but poorly developed. The various mucous membranes react much more easily to irritation with resulting inflammation, than they do in later life. As a consequence, the lymphatic system, in other words, the filter system, is necessarily much more active. The lymph nodes are much more prone at this time to take on inflammation, to harbor various pathological microörganisms.

There is the disposition,often hereditary,not infrequently aggravated by faulty conditions of development, hygiene and sanitation, to chronic inflammation of mucous membranes, skin and bone, associated with congestion and hyperplasia of the lymphatics and lymph nodes. This is the condition to which the name "lymphatism," for want of a better one, has been given.

The relation of this diathesis to tuberculosis is still a moot point. It would appear, however, that one must admit that a general non-specific lymphadenitis is frequently found. On the other hand, the existence of this hyperplasia of the lymphoid tissue certainly favors the development of a tuberculosis, for it is certainly doubtful whether the tubercle bacillus can flourish in perfectly healthy tissues. This chronic hyperplasia may aptly be regarded as a preparation of the soil whereon the seed of tuberculosis may grow and flourish.

There are two diseases of childhood in which there is always great irritation of the bronchial mucosa, and consequently, for reasons before stated, an invariable inflammation of the bronchial lymph nodes. These diseases are measles and whooping cough. It is probable that in a great majority of cases influenza in children also excites an adenitis of the bronchial lymph nodes, seeing that, in children at least involvement of the respiratory tract is almost universal in this disease.

If we consider that the morbidity of measles is probably greater than that of any other infectious disease and if we add to this the enormous frequency of occurrence of pertussis and influenza, the statement that almost every child at some time or other exhibits a bronchial adenitis, does not seem exaggerated. Of course, in many cases this adenitis recedes with the disappearance of its cause. The strong and otherwise healthy child recovers from its acute infection, and is to all intents perfectly well again. But if the child for any reason be below par in development, or in nutrition, if in other words its vitality be deficient, the adenitis persists for a greater or less time.

One of its most frequent means of entrance of the tubercle bacillus to the human body is by inhalation. Given a child with a bronchial adenitis with consequent lowered resistance, and with in so many cases an hereditary tubercular diathesis, and the result can hardly be in doubt. In this way can be explained the enormous frequency of this form of tuberculous adenitis in children.

It is not supposed,however,that this is the only method of tubercular infection of the bronchial nodes. Enlargement of the cervical lymph nodes is a frequent concomitant of disease of the nasopharynx. Where we have adenoid vegetations and enlarged tonsils cervical adenitis is common. At first simple, this often subsequently becomes a tuberculous adenitis. Then by extension in continuity the bronchial nodes may become affected.

So too we may have infection traveling upward from the mesenteric lymph nodes. The relative frequency of primary tuberculous involvement of the mesenteric nodes may still justly be open to question. There can be no doubt, however, that once such infection is present, secondary involvement of the bronchial nodes by extension may readily occur.

The symptoms are often very vague; the physical signs, especially in the early stages, either negative or indefinite.

Yet there are several symptoms, in some cases definite physical signs, whose presence justifies the making of a diagnosis on the grounds of probability. In addition to which in more advanced cases the diagnosis can be made with practical certainty.

One of the early symptoms suggestive of enlarged bronchial lymph nodes is a pecular paroxysmal cough. This cough resembles that of pertussis, except that there is no crowing inspiration. It is often very violent and exhausting, and the paroxysm may end in vomiting. The attacks may be more frequent at night, indeed there are often nocturnal attacks closely simulating asthma. Dyspnea on even slight exertion, without demonstrable cardiac lesion, is frequently present. The child is anemic, and anemia in childhood without discoverable cause is always suspicious. The child is apt to be listless, with a disinclination to play. The sleep is restless and the child may be wakened several times during the night by the cough and resulting dyspnea. The appetite is capricious and the child is not well nourished. There may or may not be slight afternoon rise of temperature. Not infrequently the child is hoarse all the time. Physical examination is usually absolutely negative at this early stage. This symptom-complex is seen very frequently after an attack of measles or whooping cough, particularly in so-called delicate children. It may also follow influenza, though it is not to be forgotten that during and after this disease we sometimes see paroxysmal cough to which the name "pertussoid" has been given

Broadly stated, the signs of enlarged bronchial lymph nodes are always those of compression. The lymph nodes lie in most intimate relation to trachea, bronchi, lungs, vessels and nerves. They are enclosed within the comparatively non-yielding thorax, and in the narrowest part of the thorax. When, therefore, they attain any abnormally large size, it is easy to see how they may give rise to pressure signs upon the surrounding structures. It is, of course, a fact that they sometimes do become enormously enlarged without giving rise to such symptoms. As before noted, the existence of even greatly enlarged lymph nodes may in certain cases only be discovered at the autopsy table.

Inspection and palpation may afford suggestive information. It has been stated before that the bronchial lymph nodes are in direct communication with the cervical nodes. It is therefore natural that the latter lymph nodes should be enlarged when the former are. As a matter of fact we frequently find this to be the case. It would, of course, be absolutely wrong to infer that the bronchial lymph nodes are enlarged whenever we find the cervical nodes enlarged. But one special type of cervical nodular enlargement is significant. Whenever we find that the supraclavicular nodes are larger than the cervical nodes higher up (unless there be local irritation or inflammation to account for this), we have a diagnostic point of importance.

In line with this is Hoffmann's observation that in these cases enlarged lymph nodes may often be felt in the jugulum if the head be bent forward.

In some cases percussion may give a sign of value. It will be found quite often that there is dullness on percussion over the sternum, behind the manubrium and the upper part of the gladiolus and extending laterally on either side of the bone, It is true that in cases of persistent or enlarged thymus there may be dullness on percussion over the sternum. But this dullness does not extend as a rule beyond the margins of the bone laterally. Occasionally where the nodes are very considerably enlarged, there will be dullness posteriorly in the interscapular space. But this will not happen often because the amount of overlying lung tissue, even with enlarged lymph nodes, is too great, so that percussion will elicit the usual pulmonary resonance.

Auscultation very often gives positive signs. The respiratory murmur in the interscapular region may be very greatly exaggerated. Inasmuch as this, owing to the anatomical relations, may very frequently be heard on the right side in normal children, this sign must be taken cautiously. But as Wiederhofer has pointed out when the auscultatory murmur is much exaggerated, or when it becomes bronchovesicular on the left side, especially if the expiration be very greatly prolonged and harsh, we have a trustworthy sign. When there is extreme compression of one of the primary bronchi, the respiratory murmur may be diminished or quite inaudible on the corresponding side. Indeed, marked alterations in the respiratory rhythm, when unilateral are always suggestive, in the absence of other local conditions to explain them.

Long ago Eustace Smith called attention to an auscultatory phenomenon very frequently present in these cases. He found that if a child with enlarged bronchial lymph nodes bends his head back, so that his eyes look to the ceiling, a venous hum of varying intensity is heard over the manubrium. This murmur gradually disappears as the chin is depressed, being lost before the head returns to the normal position. This murmur is due to the compression of the left innominate vein between the enlarged nodes and the sternum. It can never be produced by an enlarged thymus, because the thymus lies behind the sternum in front of the great vessels, whereas the nodes lie between them in the bifurcation of the trachea. Whenever this murmur can be obtained it is of almost definite diagnostic value, though if the nodes be fixed at some distance from the sternum, the murmur will not be produced by the appropriate maneuver.

If the condition be still more advanced, other pressure effects make themselves manifest. Marked distension of the cervical veins, edema of the face, atelectasis of one lung with consequent dilatation of the right heart and all of its results may occur. The hoarseness may be extreme or there may even be complete aphonia, due to the compression of the recurrent laryngeal nerve.

PERSISTENCE OF VARIETIES OF THE BACILLUS DIPHTHERIÆ AND OF DIPHTHERIA-LIKE BACILLI.

Anna W. Williams (*Proceedings of the N. Y. Patho. Society*, April, 1902) says: The investigation may be conveniently grouped into the four following heads:

1. A study of the diphtheria and diphtheria-like bacilli found in a series of clinically typical diphtheria cases at the Hospital for Contagious Diseases; (*a*) serial smears of cultures directly from throats and noses, (*b*) pure cultures isolated from these cultures.

2. A study of the diphtheria and diphtheria-like bacilli found in healthy and diseased throats in a town during an epidemic of diphtheria; (*a*) smears of cultures directly from throats, (*b*) pure cultures isolated from these cultures.

3. A study of diphtheria and diphtheria-like bacilli found in sore throats during an epidemic of diphtheria at a home for destitute children; (*a*) pure cultures.

4. A study of pure cultures of diphtheria and diphtheria-like bacilli from sources other than those given above; (*a*) on various artificial culture media grown under various conditions, (*b*) in living tissues of guinea-pigs, white rats and goldfinches, (*c*) in symbiosis with other bacteria.

The results obtained from these studies may be summarized as follows:

1. (*a*) In a series of ten cases of clinically typical diphtheria only one variety of the specifically-virulent diphtheria bacillus was obtained from the throat of each case throughout the course of the disease and until suspicious bacilli disappeared; (*b*) from different parts of the same patient only one variety of specifically-virulent diphtheria bacillus was obtained, (*c*) "pseudo" varieties were found no more frequently at the end than at the beginning of the disease, (*d*) pure cultures continued to show characteristics similar to the original cultures for many culture generations.

2. (*a*) Under normal conditions different varieties of diphtheria-like bacilli may be found in the same throat; (*b*) many throats in a single institution may contain many diphtheria-like bacilli with no case of diphtheria resulting; (*c*) there are many distinct varieties of diphtheria-like bacilli all of which in several pure cultures retain the characteristics of the original culture.

3. (*a*) In each case of diphtheria apparently contracted from the same source the same variety of virulent diphtheria bacillus was found; (*b*) this variety remained the only variety of virulent diphtheria bacilli found until its disappearance; (*c*) no gradations in pseudo types were found, the same type seen in the first examination continued to be present in later ones; (*d*) pure cultures continued to show characteristics similar to the original cultures for many culture generations.

4. (*a*) Some cultures when grown on artificial media show certain changes, but each culture changes in its own way, retaining its distinct individuality. After many culture generations, however, especially when transplantations are made at short intervals, the different varieties of the specifically-virulent diphtheria bacillus tend to approach each other, or

rather to run in lines parallel with a common norm; (*b*) no non-virulent morphologically typical bacillus has been made virulent, neither have solidly staining "pseudo" varieties or other atypical varieties been made virulent or morphologically typical.

These studies seem to demonstrate that the morphologically typical diphtheria bacillus is a distinct species from the atypical diphtheria-like bacilli, and so-called "pseudo" forms; and that it has many true morphologic varieties or sub-species which, while showing transitory ontogenic variations due to change in environment and life habit have more or less persistent phylogenic characteristics which reappear when the organism is placed in a previous environment.

DISCUSSION.

Dr. Park.—It is really extraordinary how the characteristics of different bacilli are found to persist for long periods when changed from one culture medium to another and then restored to their original medium. I believe that many of the changes reported in the literature on the subject may be attributed to errors of observation. One thing that particularly interested me was the fact, shown by observations at the Willard Parker Hospital, that whereas, the diphtheria bacilli apparently differed in virulence at different times when tested in bouillon, in reality they only differed in their rate of growth, and were very much alike when tested in ascitic bouillon. The probability is that in the throat they are always very much the same in respect of virulence.

The practical conclusion which we are entitled to draw from the investigation is that when bacilli began by being virulent they remained virulent to the end; and, on the other hand, when they are not virulent at the start, they do not become so. This being so, it does not seem that there is any use of the physician making repeated tests in any one case with the view of ascertaining the degree of virulence of the bacilli present. Summing up, the observations establish beyond doubt that the bacillus does not change from one type to another. The experiments have been most carefully conducted, and I believe the conclusions arrived at are correct.

A NEW METHOD OF TREATING THE MORPHINE AND ALCOHOL HABITS.

H. A. Hare (*Medical News*) says: Some months ago I received a letter from Dr. Lott, of Cameron, Texas, stating that he was using massive doses of hyoscine in the treatment of various forms of drug habit with very great success, and asking if I could not give any information in regard to what was to him a purely empirical plan of treatment. I asked him to write a paper on the subject, which he did and which was published in the *Therapeutic Gazette* for February, 1902. Since then I have tried the plan in six cases with extraordinary results from the following points of view:

1. The patients can take massive doses for days at a time, as much as ¼ grain hypodermatically, wiih no evil effects on any vital function.

2. They suffer very slightly, if at all, from the immediate withdrawal of the morphine.

3. And the more surprising, the desire for the drug is largely, if not entirely, dissipated after a few days.

It is a noteworthy fact that all the patients subjected to this method of treatment that I have seen have expressed themselves as feeling well, when asked questions about their own sensations, and had no serious disorder of the heart or other organs. It is also a noteworthy fact that in some of them the dryness of the tongue passed away after the first 24 or 48 hours, so that they have not suffered at all from this symptom. While as a rule they do not care to take solid food, I have never had any difficulty in getting them to take liquids in adequate quantities, both for the purpose of flushing the kidney and giving liquid nourishment.

In still another case, a comparatively young woman who for a number of months had taken ⅓ of a grain of morphine hypodermically every three hours, and at least a pint of whiskey in each 24 hours, was also given very large doses of hyoscine. For a period of three days hyoscine delirium with mental wandering was very marked, and she says that for those three days she had very little recollection of what took place. Within ten days of the beginning of the treatment, no morphine or alcohol at all having been given, the patient while still receiving these massive doses of hyoscine began to pass from under their influence, her tongue became moist, her mind clear and she herself expressed surprise that she no longer had any desire for either morphine or whiskey. Twelve days after the treatment began she asked for solid food and on the thirteenth day complained to me that her appetite was ravenous and that she could not remember when she had had such an insatiable desire for food. During the last four days of these twelve, her mental condition was exceedingly bright and cheerful and she is now progressing rapidly towards what I hope will be a permanent cure. In her case morphine had not been taken for the relief of pain, but in gradually-increased quantities for the relief of nervousness.

NEW RULES FOR CLINICS AT THE COOK COUNTY HOSPITAL, CHICAGO, ILL.

Warden Healy of the Cook County Hospital has announced some new rules to the internes and attending physicians regarding clinics. He has declared that patients who are likely to suffer any discomfort by going to the clinic will not be required to go. When Mr. Healy took charge of the hospital he adopted rules regarding clinics that were unsatisfactory to some of the medical schools. The Warden replied that he was not of the opinion that Cook County was operating a hospital for the benefit of the medical schools. At that time he prohibited operations on women in the clinic-room before the students of the medical colleges. The following patients, according to the rule, will not be taken hereafter to the clinics: Any person who will suffer in any way discomfort or actual injury; any patient who is in danger of sudden death; any patient who would be discontented or displeased because of going to the clinic. These rules were formulated by Dr. McNeill, medical officer of the day. The Warden approved of them and said that they would be enforced.—*Med. News.*

THE DEATH-RATE IN PORTO RICO.

When the utter lack of sanitary precautions is taken into consideration it is indeed wonderful that there is not even a greater death-rate among the inhabitants of this newly-acquired possession of the United States. It is said that if it were not naturally one of the most healthy sites on the globe, all the people would long since have been dead from some epidemic or other. P. R. EGAN (*N. Y. Med. Jour.*, April 12, 1902) shows that there is no attempt at any sanitary precautions except in one city and this is very slight. There are 143 huts along the stream from which Ponce receives its water supply and all of the inhabitants dispose of their excreta directly into the river. A most superficial investigation easily explained the cause of the typhoid epidemic last year. The two great causes of death, however, are anemia and tuberculosis, the former being twice as common as the latter. The ankylostoma has been thought by some to be the efficient cause of the anemia, since it is found in nearly every case investigated, but examinations frequently disclose its presence in the stools of the strong and healthy. The writer suggests that the limited variety of food-stuffs upon which the inhabitants subsist may better account for this blood condition. At least, further investigation is necessary to determine the relationship between the food and these intestinal parasites the eggs of which are omnipresent in all the waters of the island. —*The Medical News.*

VENEREAL DISEASE IN CHINA.

According to ROSANOFF (*Russky Vratch*, N. 13, 1902), who resides in Mkao, Manchuria, the opinion that syphilis was brought to that part of China by Russians is not correct; prostitution and syphilis and the other genito-urinary diseases are just as much developed in China as they are in Europe. Furthermore, he states that Chinese physicians have a special medicine for gonorrhea and a different one for the treatment of syphilis. A Russian soldier, whom Rosanoff treated for sub-acute gonorrhea and epididymitis, asked his permission to consult a Chinese physician. The latter examined him and then gave some brownish-yellow mixture, of which he ordered him to take about ½ ounce at night for three consecutive nights and one dose in a week. After each dose the patient had a feeling of general excitement; the pulse was rapid and tense; the urine contained albumin. A week after the last dose the induration of the epididymis was gone and the result of the examination for gonococci was negative. Rosanoff and his assistant, both healthy, then tried the medicine; it produced the same feeling of excitement; albumin appeared in the urine and the pulse became tense and rapid. He has also seen, though he did not follow them so carefully, cases in which the pills that the Chinese physicians give for the treatment of syphilis were effective. He promises to send some of the medicine to Russia for analysis.—*Med. News.*

INFLUENCE OF ALCOHOL ON METABOLISM IN FEVER.

As with most others, careful analyses have proved to A. OTT (*Arch. f. exp. Path. u. Pharmak.*, Vol. 47, Nos. 3 and 4) that alcohol in fever prevents proteid dissolution to about the same degree as an isodynamic quantity of carbohydrates. The conclusions to be drawn are that, though alcohol should not be thus employed as food, no contraindications exist as to its use in fever in moderation, and especially in the chronic fevers of the pulmonary diseases its general stimulation is but desirable.—*Med. News.*

MONTREAL FOUNDLING HOSPITAL.

The report of the medical superintendent of the Montreal Foundling Hospital for the past year, which closed on May 15th, shows that at the beginning of the official year there were in residence 32 babies. There were admitted during the year 159, making a total of 191 for the year, an increase of 22 over the figures of the preceding year. The deaths number 112 for the year. The receipts amounted to $6,538 and the disbursements $4,779.—*Medical News.*

PEDIATRICS

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EDITORIAL COMMENTS

Lateral Subhyoid Dermoid Cyst

A case of this rare and odd affection is reported in the *Revue Mensuelle des Maladies de l'Enfance* for June, 1902, by M. Desgouttes. It seems unusual and interesting enough to merit a rather extended notice.

The case occurred in a boy of 14 years. The father died in 1896, after an operation for stone in the bladder. The mother and a brother, the only other members of the family, were in good health. The patient himself had never been sick. The present affection was noticed a year and a half ago, when a small, indolent swelling was observed in the anterior part of the right lateral subhyoid region. For 15 months the affection remained stationary, then began again to increase in size,—without, however, departing from its original site. This caused his seeking medical advice.

On admission to hospital the tumor was found to occupy the region described above. It was elongated with long axis parallel to the lower jaw, and lay midway between the jaw and the os hyoides. It appeared as large as a small egg. The superficial coverings were unaltered and non-adherent. On palpation it was found soft, regular and fluctuating. When the patient swallowed, the tumor became harder and more prominent, appearing to divide itself into two parts separate by a furrow, the furrow corresponding pretty closely with the submaxillary gland. In front it extended to the frenum of the tongue, the frenum being a little displaced to the left but evidently not having any connection with the tumor. The adjacent mucous membrane was not altered in color or nutrition. The consistence of the growth was homogeneously soft; there was no functional trouble. The diagnosis of ranula was made.—In operating they made an incision parallel to the ramus of the jaw. The submaxillary (salivary) gland was laid bare and appeared normal. The mylo-hyoid ligament was incised in front, revealing a tumor with smooth, white walls, easily recognized as a dermoid cyst.—The growth had no pedicle nor any bony attachment. It had the shape of an egg, and was full of soft sebaceous matter. The sutures were removed in eight days, and the patient went home later, cured.

Dr. Desgouttes remarks that only five or six such cases have been previously reported, all also operated upon under a mistaken diagnosis. He thinks the mode of surgical approach described by himself the best for these cases, where the size of the tumor would make an intra-oral incision impracticable.

B.

The Treatment of Summer Diarrhea

The warm weather has begun again in good earnest and the city clinics are again crowded as of old with all grades and stages of summer diarrhea. While, statistically, the diarrhea plague may not be so great as during some other summers, the number of cases is great enough and the discomfort of the babies trying enough to fill the children's dispensaries with wailing and weeping.

A short summary of practical treatment is in order. Treatment may be summarized in three words (1) diet, (2) quiet, (3) medicine,—and the arrangement of these items is perhaps anticlimactic, as diet is the most vital item in the list. Regarding diet it is best to give to a fairly strong baby with ordinary summer diarrhea (slight fever with 8 or 10 greenish foul stools per day) only boiled water for 24–36 hours,—till the passages have improved. When the parents need "doctoring" as well as the children, the baby may receive boiled barley water (carefully strained, sweetened and salted) or rice-water. Oatmeal water is less desirable from its recognized tendency to relax the intestinal muscle.—Should the child remain unimproved for a longer period than 36 hours, of course nutriment must be given, but even then it should be only albumin water (with a drop or two of lemon juice) and barley water. Sufficiently supplied this diet will run the case quite well for even several weeks—till milk (meaning by this the best grade of bacteria-free milk) may be gradually introduced.—Next is quiet and fresh air. Babies suffer as much in diarrhea when tumbled about by their nurses as adult patients suffer when walking around. They should lie peacefully on the couch or in the cradle and make none except necessary movements. Playing about the floor should not be permitted. Fresh air is essential, however gotten. Suburban trolley cars could be utilized by the city dwellers more than they are on fine days. If the weather be rainy or temporarily chilly a steamboat trip is not desirable. The patient may cure his diarrhea but get bronchi is instead. Cool bathing is useful, and light, cool clothing very important. —Thirdly, regarding more specific medicinal measures, *primum non nocere*. Mild cases need no medicine. More severe cases need only a primary purge of castor oil, which is far better than triturate tablets of calomel, as it has a secondary "binding" influence,—an influence which most observant mothers have found out for themselves.—Severe cases may profit by bowel irrigations. The profession is now veering back to the ground of a dozen years ago and beginning to say that bowel irrigations have been much overdone and are rarely required. The truth as usual lies between the extremes. Bismuth with pepsin and sodium bicarbonate, or bismuth with castor oil, (5 minims of castor oil to 20 grains of bismuth repeated, *p.r.n.*) may be finally required to complete the cure. Opium should be avoided except in the severest choleroid cases, when the pain may be excessive without it. B.

ORIGINAL ARTICLES

CASE OF DIPHTHERIA; INTUBATION IN EXTREMIS; RECOVERY.

By Samuel G. Dabney, M.D.,
Louisville, Ky.

THE difficulty which sometimes exists in differentiating between the last stage of asphyxiation and the last stage of exhaustion is aptly illustrated by the following case. About two weeks ago I was called to see a child, 7 years of age, the family physician telephoning that the case was one of diphtheria and intubation was badly needed.

I found the child lying in bed perfectly unconscious; eyes half closed; almost pulseless, and looking exactly like a moribund child. I thought it would die in a minute or two at the latest. If I had seen this child as I saw it then, without any history being given me, I would have felt inclined to let it alone, thinking this the most merciful and wise thing that could be done.

The doctor said, however, that not many hours before the child had been doing fairly well, that it had had diphtheria for three or four days, and that a few hours previously breathing had become very difficult. The only effort at respiration that was now made was an occasional gasp, in which the head was moved slightly, a gasp, such as is seen in dying people, regardless of the cause of death.

The father and the family physician were warned that there was a strong probability if we took the child up to insert a tube in its larynx, it would die in its father's lap. The father fully appreciated the situation and left the matter entirely to me. With the history of the case before me, I thought intubation was the wisest thing to do.

We put the child in its father's lap and I inserted the intubation tube; it went in without the least resistance, it being unnecessary to hold the arms or hands, the patient being like a cadaver; the child was then put back to bed and I did not see any immediate revival; possibly air went into the lungs more easily, but efforts at respiration were very feeble.

I suggested to the family physician that he had better give a hypodermic of strychnine. The child was seven years old, and I advised that it be given 1-30 grain of strychnine, corresponding to 1-10 grain in the adult. Unfortunately the doctor had to return to his office, two squares away, to get his hypodermic syringe, and I left in a few minutes fully expecting that the child would be dead before the doctor could return and administer the strychnine. However, I received a message from him three or four hours later that the patient had revived promptly and was doing well.

He asked me to see the child with him again that afternoon, which I did, and found it breathing well and looking bright. I asked if he gave the strychnine, and he said yes, he had given 1-14 grain hypodermatically. He stated that he had seen one case where this amount of strychnine had been taken accidentally by a child about this age which was followed by no toxic symptoms, and as strychnine was indicated in this case, he proposed to give enough to do some good.

The family physician had given 1500 units of antitoxin to this child the day before I saw it—of course much too small a dose—and he gave 3000 units more just after revival of the patient following administration of the strychnine. The child went on and made a perfect recovery.

The case is of interest, showing the difficulty that exists, in the very latest stages, of differentiating a death from exhaustion and a death from suffocation. Of course when the patient is seen earlier the land-marks are well defined. This child has passed the stage when the symptoms of asphyxiation existed. It was saved by intubation, strychnine and antitoxin.

Japanese Surgeon Here.

Dr. S. Kirnura, Inspecting Surgeon of the Japanese Navy, is spending three months in the United States, to examine the medical and hygienic arrangements of the Navy.—*American Medicine.*

AMERICAN MEDICAL ASSOCIATION.

SECTION ON PEDIATRICS.*

Tuesday Afternoon, June 10, 1902.

H. M. McCLANAHAN, of Omaha, Neb., delivered the Chairman's Address, his subject being **Lessons from Current Pediatric Literature.** Over 400 papers were published during the year, 286 of which were devoted to the consideration of infant feeding. Cow's milk is now universally recognized as the substitute for human milk, but it should be modified. The speaker calls attention to the marvelous advance made along this line in the past five years. The papers on infectious diseases disclosed nothing new, either in pathology or treatment, but rendered our present ideas more clear In the 82 papers on diphtheria, not a death was recorded when antitoxin had been employed. Scarlet fever was considered in 18 papers, especial attention being given to the diagnosis of the milder type. Measles received attention in 14 papers. The speaker called attention to the value of Koplik's sign as a means of diagnosis. Eight papers appeared on whooping cough. Of the remedies most frequently employed he mentioned antipyrin and belladonna. Diseases of the respiratory tract received attention in 31 articles. Secondary pneumonia in infants is the most serious disease with which we have to deal. The treatment consists in supporting and stimulating measures, the remedies most frequently recommended being strychnine, digitalis and steam inhalations. Seventeen papers appeared on general tuberculosis. He thinks the importance of glandular tuberculosis is not appreciated. Twenty-five articles dealt with diseases of the nervous system, the relation between anemia and nervous diseases being emphasized, and 25 papers on diseases of the genito-urinary organs. The operation of circumcision is becoming more and more avoided.

T. M. ROTCH, of Boston, Mass., read a paper on **Tubercular Peritonitis.** Pathologically three types are recognized:

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* By courtesy of the *Philadelphia Medical Journal.*

(1) miliary tuberculosis with ascites; (2) a fibrous form in which there may or may not be ascites; and (3) a later stage of the second form in which there occur large tubercular products with softening. He calls attention to the variableness of the symptoms and the difficulty of making a diagnosis. The tuberculin test, as a means of diagnosis is of value, but the speaker pays little attention to leucocytosis. Examination of the urine should be made and a swab should be inserted into the esophagus and then examined for tubercle bacilli. Laparotomy is indicated, especially in miliary tuberculosis with ascites, and is also the best treatment in the localized chronic form. This has proved successful when all other methods failed. The prognosis is better after the first year. He reports 69 cases, 39 in boys and 30 in girls, the youngest patient being 14 months old, the average between 2 and 4 years. In 20 cases there was a family history of tuberculosis. In Chicago the X-ray has been successfully employed and he recommends its use when operation is contraindicated.

J. P. Crozer Griffith, of Philadelphia, read a paper entitled **Cerebrospinal Fever.** Owing to the great variation in symptoms the disease is often difficult and sometimes impossible to diagnose. In some cases it is of the fulminant type, in others so mild that the child seems scarcely ill, and, too, the effect of the germ sometimes seems to be more localized in other regions of the body than the brain and spinal cord. He calls attention to the following classification: (1) ordinary; (2) malignant; (3) mild; (4) abortive; (5) intermittent; (6) chronic, and describes two family epidemics and two chronic sporadic cases. In the first epidemic two sisters were the victims, in one it was severe, the child dying, in the other mild. The first chronic case occurred in a boy, 10 years old, and presented a great variation in symptoms from day to day. The second chronic case resembled typhoid fever, the Widal reaction being positive. The disease lasted five months, the child gradually recovering.

Wahrer, of Iowa, reported a case which closely resembled **enteric fever.** He made the diagnosis from Kernig's sign.

Abt, of Chicago, thinks these cases should be isolated. He reported a case in which they made several lumbar punctures and succeeded in isolating the diplococcus intracellularis.

Rotch, of Boston, spoke of the difficulty in making a diagnosis, and of the value of lumbar puncture as an aid. He thinks it should be taken early. Lumbar puncture is not curative, though in one of his cases after isolating the diplococcus intracellularis a second puncture was made, the patient improved and eventually recovered. Regarding the prognosis, the shorter the course, the more serious the disease. The danger is in the first and third weeks. In the chronic form the prognosis is as a rule bad.

Acker said that in his experience the disease was ushered in at night. In the treatment he advises three remedies—potassium bromide, Fowler's solution, and, in the convulsive stage, tincture of gelsemium.

Griffith said that in all the cases described Kernig's sign was absent. He is rather skeptical regarding its value. He keeps his cases in the ward, and does not believe it will spread more than typhoid fever. No results were obtained from lumbar puncture, though he believes in trying it.

E. F. Brush, of Mount Vernon, N.Y., read a paper on a **Case of Typhoid Fever in an Infant Under one Year of Age.** Typhoid in so young an infant is very rare, but very few cases being recorded. The child was nursed until six months old when its mother was taken ill with typhoid fever, which dried up her milk, after which water, which is supposed to be the source of the mother's infection, was added to the child's diet, the child contracting the disease a short time thereafter. The author considers this one instance in which an infant did not resist typhoid infection when subjected to the same conditions as adults.

A. C. Cotton, of Chicago, stated that in the Foundling Home, of New York, no post-mortem evidence of typhoid could be found, though many cases were diagnosed as typhoid. Yet he thinks children do not show the typical intestinal lesions that are found in the adult. He considers the Widal test the only absolute test, and states that children react as readily as adults. He thought it possible that in the case under discussion the child may have been infected by other than the contaminated water.

Griffith, of Philadelphia, believes that typhoid fever is much more frequent in children than is thought. He reports a case of typhoid fever in a child in which there were intestinal hemorrhage, which is rare. Regarding the Foundling's Home of New York, the speaker said that in the autopsy reports mention is made that many cases showed a condition resembling enteritis, and he thinks that probably some of these may have been typhoid.

Shaw, of Albany, N.Y., reported a case in a child of 18 months, in which the symptoms were typical of the adult form.

In closing the discussion, Brush said there was no doubt about his case being typhoid. He does not believe the baby contracted the disease from its mother and considers the contaminated water the source of infection.

E. ROSENTHAL, of Philadelphia, read a paper entitled **Serum Therapy**, in which he considered the various serums now on the market. In the majority of instances he thinks that they prove fallacious and misleading. Diphtheria antitoxin, however, is a specific, and sure, and in some cases good results have been obtained from antitetanus serum.

A. C. Cotton, of Chicago, stated that the effects of antitetanus serum have been practically *nil* in his experience.

Wednesday Morning, June 11.

M. T. SHUTT, of Springfield, Ill., read a paper on **Acute Gastric Enteritis of Infants.** Heat plays an important part in the etiology of this disease. It lowers the vitality and produces great thirst. Improper feeding, overfeeding and artificial feeding act as causes, cow's milk being responsible for this condition in many cases, even though boiled milk be given, for some toxins are not rendered innocuous by heat. No specific organism has as yet been isolated. The symptoms consist of fever followed by frequent stools with pain; prostration is marked; the stools vary in number, from four to twenty a day, are foul-smelling and putty-like, and in many cases of a green color. If the condition continues for many days the feces may contain mucus and pus. The prognosis is grave in the choloraic type. The treatment consists first in prophylactic measures. The child should be kept clean and cool and be given a limited supply of proper diet. All milk food should be stopped during the attack and calomel given to clean out the intestines. When the stools are offensive, flush out the colon. If collapse comes on, hot normal salt solution should be used, and if nausea is present, castor oil should be given. The diet should be limited, and consist of animal broth, egg water, or liquid peptonoids. The infant should be given all the cool boiled water it will drink. Tonics may be indicated during convalesence.

Milk Idiosyncrasies in Children was the title of a paper read by Dr. Louis Fischer, of New York. He reported the following case: The mother of an infant had no milk and a wet-nurse was secured, but only kept three months as the child had gained but little weight and did not thrive. After three months of age, the child had been weaned by the father, a physician, and condensed milk was given. The child vomited frequently and was always constipated, requiring an enema every day. The stools contained shreds of mucus and were very foul smelling. Various artificial foods were tried, fifteen or more, and the infant did quite well until milk in some form was added. For several weeks the child had lost weight at the rate of 2 ounces per week. Upon examination it was found that the infant was rachitic; the extremities were cold, and the circulation poor and feeble. A soft hemic murmur was heard at the base of the neck. The nurse stated that sometimes after feeding the child had convulsions, which persisted until the colon was flushed. Spoon feeding was finally resorted to, and milk was given in various ways; sterilized, pasteurized, raw and peptonized. When first seen by the writer, water and whey was being used. Upon this it improved, but as soon as milk was added it became worse. Malt soup was then given and from that time the infant began to thrive and all symptoms disappeared. Case 2 was an infant with congenital adenoids. The child would not take the breast but after removal of the various adenoids, it took the food all right.

Thos. S. Southworth, of New York, read a paper on the **Improvement of Breast-Milk and Prolongation of Lactation.** Lactation is a much neglected subject. There are simpler ways of judging the quality of milk than by a full chemical analysis, for example, with Holder's apparatus. A faulty or deficient supply of milk is often due to an unsuitable diet or lack of outdoor exercise. The improvement of breast-milk is a simple matter. The diet of the mother should be first semisolid, later solid; she should drink plenty of milk, water and cocoa. Tea should be prohibited. The diet should consist of good nutritious food that the mother knows will agree with her. The administration of beer he thinks unnecessary. Anemia should be corrected, by Blaud's pill, cascara sagrada to combat any constipating effect, sleep, exercise and fresh air. The speaker considers bad nursing habits and faulty maternal diet the chief causes of trouble at three or four months. Nursing should be carried out during the greater part of the first year, assisted, if necessary, with a few bottle feedings. There is a serious responsibility in weaning, as exclusive bottle feeding causes a larger mortality than when at least partial breast feedings are maintained.

A. McAlister, of Camden, N.J.. read a paper on **Infant Feeding**, in which he spoke of the superiority of breast over artificial feeding, for no chemist has given us a synthetic human milk. The milks of different individuals vary, nor is it the same at different periods in the same individual. Each mother's milk is adapted to the requirements of her child, and no artificial product can take its place. The amount of milk is determined by the infant's desire. In speaking of cow's milk, he said cow's casein is not human casein and cannot be assimilated as readily by the infant. If cow's, or any milk other than human be used it should be first heated.

Wahrer, of Iowa, stated that the origin of artificial foods dated back to a time when good cow's milk could not be obtained in large cities. He thinks good cow's milk, slightly modified, may be used to advantage.

Kelly, of Ohio, reported three cases of **milk idiosyncracy**. He thinks it advisable to add malt to the mother's diet during lactation. The speaker believes that mixed feeding should not be allowed when one complete nursing cannot be secured at both breasts.

Morse, of Boston, Mass., said that there is no doubt that there have been cases of milk idiosyncracy, but they are rare. He thinks mixed feeding should be continued as long as the mother can nurse, no matter how small the quantity is, the infant thus getting the advantage of the ferment contained in the mother's milk.

Griffith, of Philadelphia, considers that food is administered far too strong at first for the infant's requirements, and after disturbances of digestion, it does not react promptly and relapses are common. He thinks the peptonoid foods are very useful.

Cotton, of Chicago, stated he would like to see artificial feeding driven from the earth; it would drive us to the necessity of making the maternal fount adequate. He believes that many more children are artificially fed than breast-fed. The continuous use of liquid diet during lactation is a mistake, for at no time during her history is the mother better fitted for digestion.

Leonard, of Massachusetts, stated that fresh air and cleanliness, as well as good food, are important factors in the growth of the infant. He gives pure cow's milk from the beginning in small amounts, far apart.

Morse did not agree with Leonard, that whole cow's milk be used for very young infants and considers a three-hour interval between feedings too long.

DeVoe thinks preparation should be made for good milk during the mother's pregnancy.

Rosenthal, of Philadelphia, stated that as soon as he placed the mother on malt or beer, the child had colic.

Jacobi, of New York, thinks we generalize too much in infant feeding; infant's requirements are different. See that cow's milk is employed that is pure, fresh and germfree. The newly-born babe should be fed well, principally with water. He calls attention to the frequency of nephritis in the newborn, and is of the opinion the administration of water will relieve it.

W. FREUDENTHAL, of New York, read a paper on **Adenoids.** Two forms are recognized—the acute and chronic. The main symptoms of the acute form is earache. The chronic form is found in all countries, warm and cold. The mode of living and pure hygiene play an important part in the etiology of this condition. It frequently follows catarrhal conditions, tuberculosis and rheumatism. Only operation will give relief. The speaker does not like to operate on children under two years of age and does not if there are no complications and if nourishment is taken. It is impossible to carry out antisepsis, and syringing the nose before operation is dangerous. He operates with the child flat on the back, shaving the surface clean and no more.

Wednesday Afternoon, Jnne 11.

Geo. L. Richards, of Fall River, Mass., read a paper on **The Treatment of Acute Earache, Otitis Media, in Young Children.** Acute earache in young children is frequently severe and sudden in onset, and when it has persisted for some time, probably nothing short of paracentesis will relieve it. In the acute form, however, the speaker uses a glycerole gelatine bougie, which has given gratifying results. The formula is as follows:—

℞	Carbolic acid	7 m.
	Flx. ex. of opium	6 m.
	Cocaine	3 gr.
	Atropine sulph.	3 gr.
	Water	52 m.
	Gelatine	18 gr.
	Glycerine	158 gr.

This makes 47 bougies.

They should be kept in lycopodium or wrapped in tinfoil. Before using, the bougie should be dipped in water, then it will readily slip into the external ear, and dissolving, set free the anodyne.

Cook, of Chicago, said there is no question that glycerine and carbolic acid are of value in this condition, and thinks this value is enhanced by the other remedies which have been added.

Cook, of Chicago, read a paper describing a **tumor** in a girl 13½ years old, which filled the entire abdominal cavity. The abdomen in its greatest circumference was 27 inches. Exploratory incision revealed an immense tumor, which was soft and pale gray in color. A diagnosis of inoperable sarcoma was made, the child dying two months later. The autopsy showed the tumor filled the entire abdominal cavity and was attached to the kidneys. Numerous metastatic growths were found scattered over the omentum. The tumor, with the kidneys attached, weighed 7 pounds. The specimen was exhibited.

W. C. Hollopeter, of Philadelphia, Pa., read a paper on **The Unrecognized Causes of Some of the Anemias of Childhood.** The great primary cause he considers is dental decay, resulting in infection. This affection is very common in childhood, and too little attention is paid to it. The second unrecognized factor is mouth breathing, due to nasal catarrh. Acute catarrhal conditions can and should be immediately corrected. Eye strain also plays an important part in the etiology of anemia in children. This is seen especially in school children, who are compelled to study in rooms where the light is poor.

Abt, of Chicago, agrees that dental caries is common in children, but does not think anemia should be assigned to dental caries, eye-strain or mouth breathing.

Morse, of Boston, however, thinks there can be no doubt that dental caries, mouth breathing and eye-strain are causes of general debility and anemia, but does not think caries the most frequent cause of anemia.

Cooper, of Philadelphia, is of the opinion that decayed teeth frequently cause anemia by preventing sufficient mastication, and reports a case of this character. The greatest number of anemic conditions, however, he thinks is due to nerve strain and nerve shock.

Cotton, of Chicago, agrees with Hollopeter that anemia in children is frequently due to unhygienic conditions, and dental caries and mouth breathing come under this head.

Kelley, of Ohio, has seen many cases of anemia in children and thinks improper feeding the most frequent cause. Children should receive more proteid and less starchy diet.

Griffith, of Philadelphia, stated that rickets is an extremely common disease of children, and not only causes anemia, but predisposes to the early decay of teeth.

Morse, of Boston, read a paper on **Retropharyngeal Abscess in Infancy,** which he divides into primary and secondary. The primary form is more common in infancy. The greatest number of cases occur between the ages of four months and two years, and it is always preceded by a retropharyngeal adenitis. Examination by the finger reveals nothing but some enlarged lymph-nodes. Suppuration, when it occurs, usually develops in from five to six days. With the advent of suppuration the temperature becomes elevated. The first symptoms noticed are inability to take food, modification of the voice and snoring and snuffling breathing. The diagnosis is easy, but the disease frequently overlooked. The throat should be inspected in all suspected cases. The prognosis depends largely on the treatment, untreated cases as a rule ending fatally. The abscess seldom opens spontaneously, but may rupture into the pharynx, carotid artery or externally. As soon as recognized the abscess should be opened, and in these cases the mortality is only about 5 per cent.

Abt, of Chicago, calls attention to the relative rarity of the disease, he having seen but few cases.

Fronzitle, of Buffalo, reported a case in which the child suddenly died while they were preparing for operation. He thinks death was due to pressure on the vagi.

Kelley, of Ohio, reported a case in which the child promptly stopped breathing as soon as pressure was made. Intubation was immediately performed and artificial respiration resorted to, and the child recovered.

Griffith, of Philadelphia, called attention to the great ease with which the diagnosis can be made and the frequency with which it is overlooked. The turning of the head and sputtering respiration are characteristic symptoms. He is of the opinion that simple incision is not sufficient, and recommends dilating it.

A. C. Cotton, of Chicago, reported a case of **bulbar paralysis** in a school girl, 11 years old. She had the usual diseases of childhood, pneumonia when six years old and diphtheria three years ago. For the past two or three years there has been some impairment of hearing. Early last September her mother noticed the child had some difficulty in swallowing, and a slight defect in speech. Deglutition later became very difficult, the patient having to use the hand to retain food in the mouth. She became greatly emaciated, and the expressionless face attracted attention. She cannot wrinkle the forehead, close the lips, or smile, and the tongue cannot be protruded beyond the teeth. The voice was of a nasal quality, and the mouth was continuously full of saliva. Examination of eyes and ears was negative, excepting that at times she is unable to close the eyes. Inanition steadily progressed, and, toward the last, fluids regurgitated through the nose. The post-mortem has not been completed at the time of reading of this paper.

Thursday Morning, June 12.

D. RIESMAN, of Philadelphia, read a paper on **Synostosis of the Skull, with Universal Calcification of the Arteries in a Boy, 3 Years of Age.** Riesman stated that arterial disease is rare in children, but not as rare as believed. This case is interesting on account of the syntososis of the skull. The child was born without instruments at term of healthy parents, and weighed 4 pounds at birth, but seemed healthy. Bottle-feeding was resorted to but the infant did not thrive. Dentition proceeded normally as regards time; the teeth were, however, small and inclined to decay. It never acquired the power of speech, and always ate by a process of lapping. There was no evidence of rickets or scurvy. Cod-liver oil and iodide of iron were administered but were of no avail. The boy could not digest milk, and wasted away. Autopsy; boy greatly emaciated, the legs and arms being no larger than those of a new-born infant; the left testicle had not descended; the hypogastric arteries were well marked and distinctly calcareous; the intima of the aorta was thickened and showed beginning sclerosis, and the kidneys were extensively infiltrated with calcareons matter. The sutures of the skull could not be seen; the dura mater was thick and rough, and a considerable quantity of fluid occupied the subdural space. Section of the lungs showed emphysema, and the alveolar capillaries to be infiltrated with lime-salts. The brain was undeveloped, and the question arises, was the synostosis the cause of the undeveloped condition of the brain, or vice-versa?

Wahrer, of Iowa, asks if Cohnheim's theory would explain the production of this synostosis, or is it due to abnormal metabolism? He asks if there was any history of syphilis.

Riesman said that probably abnormal metabolism was the cause. Cohnheim's theory, he thinks, is in danger of being relegated to the past. In this case no history of syphilis was obtainable.

Spontaneous Hemorrhage in New-Born Children was the subject of a paper read by I. A. ABT, of. Chicago. Two varieties of hemorrhage are observed—traumatic and spontaneous. He dealt entirely with the spontaneous variety, which may occur under the skin, in the cavities of the body, or in the mucous membranes. He reported ten cases. The etiology is not clear. Numerous microorganisms have been described and thought to be causes. Congenital syphilis has by some been considered a factor, and in three of his cases syphilis was undoubtedly present; in two of the cases there were septic processes which may have been etiological factors. He does not consider the condition, however, as the result of any one factor. The sites of the hemorrhage varied, being more frequent under the skin, and from the mouth, nose and bowels. Internal treatment is of no benefit. Styptics, packing with gauze, and even the local application of suprarenal extract is without influence in many cases. Gelatine has been tried and is sometimes of benefit, but its action should be carefully observed.

Englemann, of Chicago, is of the opinion that sepsis is responsible for spontaneous hemorrhage in many instances. She has seen it also in cases undoubtedly syphilitic.

Small, of Pittsburg, reported five cases, one in a healthy appearing child, which suffered from profuse hemorrhages at birth.

Holmes, of Chicago, has used gelatine twice, injected intravenously, with good results. He advises feeding the child on gelatine foods, and asks if calcium chloride would not prove beneficial.

Jacobi, of New York, said that about forty years ago cases of this kind were not rare. That they are now rare he attributes to the thorough antisepsis which is carried out during labor. He called attention to the immature structure of the vessel walls in the new-born, and thinks this has much to do with spontaneous hemorrhage. The hemorrhage in the newborn is apt to be copious, because in the early months of infancy the blood contains less fibrin and salts than in later life, and a greater quantity of hemoglobin, hence not coagulating as readily. Meningeal hemorrhage he considers frequent in the new-born and many deaths are due to it.

Cook, of Chicago, reported a case. The child was born in a house in which sewer-gas was present, and he is of the opinion that the gas was in part responsible.

Abt, in closing the discussion, said that calcium chloride had been warmly recommended, especially when administered to the mother during pregnancy, small doses being continued after the birth of her child as a prophylactic. He agrees with Jacobi that these cases are the result of (1) infection; (2) porosity of the vessel wall, and (3) the slowness with which the blood of infants coagulates.

R. ENGLEMANN, of Chicago, read a paper on **Sporadic Cretinism in Children**, and reported a case which improved on thyroid extract. She called attention to the frequency of this condition, and thought heredity and infection were of importance as etiological factors. The relation between the thymus, thyroid and pituitary glands received considerable attention.

Shelly, of Kansas, reported a case which did well on thyroid extract.

Jacobi, of New York, thought the correlation of the ductless glands deserves emphasis. He pushed the thyroid extract, in one case giving 24 gr. three times a day.

Riesman said thyroid extract failed in epidemic cretinism (1) because the cause persists, and (2) the patients will not continue the treatment.

G. F. WAHRER, of Fort Madison, Iowa, read a paper on **Chlorosis.** The diagnosis and treatment of this affection are comparatively easy, yet there are many possible sources of error. The worst cases are found among factory girls and those confined within doors. He calls attention to the value of blood examinations and the frequent association of tuberculosis with chlorosis. Iron is the remedy, and few preparations excel Blaud's mass. Constipation is relieved by cascara sagrada.

Walls, of Chicago, referred to the investigations of Lloyd Jones, who believes that every young woman in this country is skirting along the line of chlorosis, and it takes but little for her to fall over the brink. He thinks the trouble is due to a lack of iron absorption. The treatment requires time and patience.

Abt, of Chicago, stated that chlorosis occurs most commonly at the time of puberty and for this reason he thinks there is some relation between the generative organs and the condition of the blood. Also at the time of puberty many girls are constipated, and toxins are generated which may cause the blood changes of chlorosis.

Schutt, of Illinois, has seen two cases in which eye symptoms were prominent; improvement on iron was rapid.

Thursday Afternoon, June 12.

L. J. LAUTENBACH, of Philadelphia, read a paper on the **Recognition and Prompt Removal of Postnasal Adenoids in Children.** Adenoids are of frequent occurrence, especially so in the scrofulous and poorly nourished. They are usually present in cases of enlarged oral tonsils, and frequently seen among deaf mutes. The finger operation he considers the most thorough.

Hollopeter, of Philadelphia, thinks enough attention is not paid to adenoids and operation is imperative when a defect in hearing is noticed. The operation, in his experience, can be done more satisfactorily without anesthesia. He recommends the finger method, but is afraid Lautenbach's artificial fingernail is too large.

Kelley, of Ohio, thinks much harm is done with the currette, and he has had trouble with cocaine. Lautenbach's artitificial finger-nail is too long, though the shape of the finger will have to determine the size of the nail. He fastens the nail on with a bandage, as there is danger of its slipping off the finger.

Frederichs favors general anesthesia, and Roch, of South Dakota, thinks it advisable to give chloroform, as children stand it well.

S. W. KELLEY, of Cleveland, Ohio, read a paper on **Dermoid Tumors in Children**, reporting two cases, one in the testicle, the other in the ovary. Dermoids are very rare in the testicle, but of greater frequency in the ovary. In both these cases the tumor was removed and recovery followed.

F. X. WALLS, of Chicago, Ill., reported **three cases of sudden death in infants with lymphatic constitution.** The first case was that of a girl, 8 months old, who was fed on the breast and by bottle, and was considered to be a healthy child. The child suddenly died during the mother's absence of a few moments. In this case there was universal hypertrophy of the lymphatic tissue. The second case occurred in a boy, who was lying in bed, suddenly choked, and was dead before the children, who had been in the room with the boy, could find and return with his mother. In this case the lymphoid tissue of the intestine was greatly hypertrophied. The third case occurred in a boy of 2 years. There was great increase in the size of the thymus in all these cases.

Abt, of Chicago, thinks it possible to diagnose some of these cases during life; that a dull note might be elicited on percussion over the enlarged thymus.

Shaw, of Albany, N. Y., reported three cases of this condition, in all of which an enlarged thymus, and in one case a thymic abscess was found.

Abt, of Chicago, regards thymic abscess pathognomic of congenital syphilis.

In closing the discussion, Walls said an enlarged thymus might possibly give a dull note on percussion. He does not consider thymic abscess pathognomic of congenital syphilis, though it is frequently found in those cases.

A Curious Medical Case in Montreal.

An interesting judgment has been given by Judge Doherty in the Superior Court of Montreal. A man who was injured by a locomotive was taken to the Royal Victoria Hospital, where the toes and a portion of his left foot were amputated with his consent. Two weeks later the entire foot was removed without the patient's consent, who brought suit for $1,999 damages. The court found that the surgeons and the hospital had exceeded their rights and were to be held responsible for any damages resulting to the plaintiff. However, as the evidence showed that the patient's condition had been improved by the operation in question, the Court held that no damages had been proved, and the case was dismissed.—*American Medicine.*

CORRESPONDENCE

A Case of Diaphragmatic Hernia in the New-Born.

Mrs. W. W., age, 19, expecting to be confined. I was called on the evening of March 24th; found the os fully dilated, membranes unbroken and breech presenting. As labor was slow I ruptured the waters, catheterized and ordered the nurse to give rectal injection, with instructions to call me when pains were five minutes apart.

I was called at 4 a.m. and made everything ready; at about 5:15 the baby was born. It made many convulsive movements with the throat, and the heart could be seen lifting the sternum in a rhythmic manner. I cleaned the mouth and nose and then tried the different methods of starting respiration but with no result; the child became slightly cyanotic and the heart action ceased at about 5:30. After getting through with the mother I asked for and obtained an autopsy.

On section the left thoracic cavity contained the stomach and a quantity of small intestine, and a nodule not as large as a filbert which was adherent to the trachea. This represented the lung. The liver was considerably larger than the usual large liver of the new-born. The heart was pointing outwards downwards and forwards to the right and was well to the right of the median line. An equal amount of right and left heart presented. The arch of the aorta also partook of the same change of position. On opening the heart the right and left sides contained blood (semifluid) and the foramen ovale was open. The right lung was only about one-half its natural size and about the consistency of liver.

The peripheral attachments of the diaphragm I could not locate; the median portion was a small roll or ridge with pleura or peritonium covering it, and the left kidney appeared to be about 1 or 1½ cm. higher than the right.

The mother speaks about a severe fall between the second and fourth months.

E. F. Conyngham, M.D.

Philipsburg, Mont.,
May 5, 1902.

BOOK REVIEWS

THE DIAGNOSIS OF SURGICAL DISEASES. By Dr. E. Albert, late Director and Professor of the First Surgical Clinic at the University of Vienna. Authorized translation from the eighth enlarged and revised edition by A. T. Frank, A.M., M.D. With 53 illustrations, 8vo, pp. vi and 419. D. Appleton & Co., New York.

This book is well written and merits close study both by the student and by the general practitioner, while even those well versed in surgery may perhaps be able to glean something from its pages. While America has many excellent works on medical diagnosis the surgical side of the subject has not been so thoroughly worked up, and the translator says that if even in a measure he can fill the gap with Albert's work he will be satisfied. The book is written from a thoroughly practical standpoint. Diseases are grouped according to similarity of symptoms and points of general resemblance. The subject is clearly and forcibly set forth. The illustrations are good, and the whole work highly creditable to the author, the translator and the publishers. T.

THE PERVERTS, a novel. By William Lee Howard, M,D., Baltimore, Md, G. W. Dillingham Company, New York.

This book is not suited for the home circle and one should hesitate to introduce it there. The subject matter is not quite so revolting as the name might lead one to suspect, but it is bad enough. Much knowledge of the criminal insane is imparted in a ponderous literary style. The *raison d'etre* of the work appears to be to popularize the present views of advanced criminologists and alienists regarding hereditary predisposition to excess and crime. It takes the ground that in many instances such feelings are evidences of inherited nervous instability and that such perverts are to be considered as diseased rather than as criminals. In so far as these creatures are necessitated by hereditary bent, they are to be pitied rather than punished and efforts made by proper treatment to train them so as to overcome their morbid impulses. The greater will be the chance of successful treatment, the earlier in life such tendencies are recognized by competent observers· T.

PRACTICAL NOTES

The Treatment of Grave Scarlatina.

M. Arviragnet (*Presse Medicale; Revue Medical*, October 9, 1901) prefers hydrotherapy to antithermic remedies, and gives baths at from 64° to 68° F. in the adult, or at 77° F. in children. In the latter case if the applications are to be long continued, cold envelopments are better borne. The cold-bath is indicated in the ataxic forms; but if the disturbance does not coincide with elevation of temperature, hot baths act better. Hydrate of chloral is of service in persistent cases. For adynamia and in the algid forms, M. Arviragnet recommends injections of artificial serum or camphorated oil. In the cardiobulbar forms, with irregular heart action and respiration and a tendency to syncope, the best results are obtained by injections of caffeine. In the hemorrhagic forms, in addition to the preceding measures as called for, ergotin, iron perchloride, rhatany and hamamelis are recommended. Mr. Comby prescribes:—

℞	Gallic acid	15 gr.
	Syrup of orange flowers	450 min.
	Distilled water	1200 min.

M.—A coffeespoonful every hour.

M. H. Roger is well pleased with the result of chloride of calcium in hemorrhagic scarlatina. His prescription for an adult is:—

℞	Crystallized calcium chloride	from 60 to 90 gr.
	Syrup of bitter orange peel	10 dr.
	Old brandy (or rum)	1 oz.
	Tincture of cinnamon.	75 min.
	Distilled water	to 4 oz.

M.—To be taken in divided doses in the 24 hours.

Solutions of gelatine have their indications in epistaxis and uterine hemorrhages. Intestinal hemorrhages may be combined with large enemata of boiled saline solution containing either tannic acid or rhatany.—*Thera. Monthly.*

Gastric Fever in Infants.

This combination has been in use for a number of years at Guy's Hospital.

℞ Sodæ carbonatis exsiccatæ	1 dr.
Hydrargyri chloridi mitis	12 dr.
Pulveris cretæ compositæ	2 dr.

S.: Give 3 to 8 grains at night for a week in infantile gastric fever, followed in the morning by 5 grains of rhubarb mixed with 10 grains of the sulphate of potassa.

Drs. Fordyce and Golding Bird, as well as a host of others, speak enthusiastically of the favorable effect of this treatment.—*Therapeutic Monthly.*

Volcanic Gases.

As the result of analyses made by J. S. Diller, George Steiger and others of the United States Geological Survey of the volcanic sand and dust from St. Vincent, the conclusion is reached that the sudden destruction of life resulting from the recent eruptions at St. Vincent and Martinique was due to the heavy sulfurous acid and sulfurated hydrogen gases.—*American Medicine.*

In operation upon alcoholic subjects it is often wise to give them a drink of spirits an hour or less before its performance. These people are more restless than others and often require a greater quantity of the anesthetic to abolish sensibility, but long deprivation of drink, if anything, only tends to itensify those unfavorable tendencies.—*Inter. Jonr. of Surg.*

Never allow a stitch to remain in the skin any longer than is absolutely necessary. In vascular tissues, such as those of the face and hands, union, if it is to take place by first intention, is so rapid that two or, at most, three days are often long enough to leave stitches in.—*Inter. Jour. of Surg.*

ABSTRACTS

A CASE OF STOMATITIS GANGRENOSA (NOMA).

L. Fischer (*Jour. Am. Med. Sciences*, April, 1802) reports the following case:

Elsie G., aged seven years, was seen in January, 1900. The child had complained of severe headache for three or four days and was very feverish. Her mother became alarmed because of persistent vomiting. She stated that the child vomited at least six times in the 24 hours. She complained of feeling fatigued, and had pains in her arms and legs.

Small doses of quinine were given the child but did not seem to relieve the present condition.

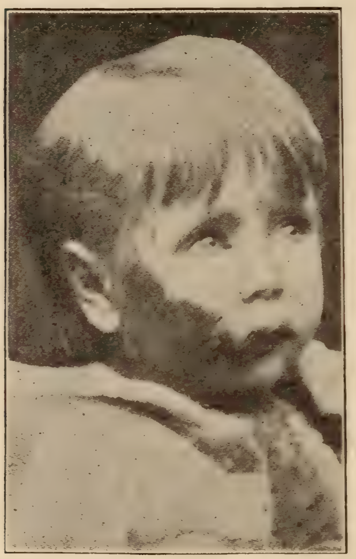
The child was nursed for ten months and was a strong baby up to this time; dentition commenced at the seventh month; the child's muscles and bones were well developed; there were no evidences of rickets; the first two years were passed without any sickness except an occasional attack of constipation. The child walked at the end of the first year and commenced talking at its fourteenth month. Twenty teeth—"milk teeth"—appeared at the end of two years. The child had measles in its third year which left a bronchitis; the mother states that this same cough recurs every winter. The child has had whooping cough, lasting four months, which was so violent that it had epistaxis almost every day for a month. This whooping cough was so severe that, in addition to the nose bleed, the child vomited almost continuously. From loss of sleep, in addition to the above named symptoms,the child commenced to emaciate. This was at the end of her fifth year.

She lost 12 pounds in two months, and the mother states that since that time she has been very puny and delicate. There is also a hernia directly traceable to the violent paroxysms of cough.

The mother suspected the child was suffering from malaria, or possibly an attack of grip. When the child was undressed an eruption was found all over the body, which was that of typical scarlet fever. The throat was filled with evidences of pseudo-membranous patches which were distinctly scarlatinal in character. The temperature was 103.4° F., taken in the rectum; pulse, 128; respiration, 22. The child was put to bed and an expectant plan of treatment ordered, in addition to a very light liquid diet consisting of soup, milk, buttermilk, broth. Nothing else was allowed; no solids were given. For the thirst he ordered orange-juice and apple-sauce. Small doses (wine-glasses) of citrate of magnesia were given for their laxative and diuretic effects.

Desquamation followed in the second week in the usual manner. The urine showed traces of albumin in the second week, which increased until that time—six pro mille, according to Esbach's albuminometer—hyaline and epithelial casts were found in great numbers. There were also large quantities of blood corpuscles visible under the microscope. The urine was quite red from the blood that it contained. At the end of the third week there was quite an anuria. This latter condition was relieved by the application of several dry-cups over the region of the kidneys. Five to ten grains of diuretin internally were ordered every four hours. Citrate of potash was given, 5-grain doses combined with large quantities of Appollinaris and lithia water. After three weeks of patient treatment the child recovered.

The heart-sounds were not only very feeble, but thready, and a loud, blowing, hemic murmur was audible, which was attributed to the anemic condition. Iron was given in the form of the syrup of iodide of iron; hypophosphites were also administered as restoratives. Convalescence lasted in all until April, a period of almost three months from the time of the child's first illness. About this time she complained of pain in the gums and on the cheek while chewing. Later, the foul breath attracted attention. At first this condition was attributed to the teeth, but a dentist who saw the child found the teeth and gums healthy. The ulceration which had now become marked, from the size of a silver dollar, spread with remarkable rapidity. Its color was that of a dirty, blackish-gray, and had purpuric spots scattered around the edges of this ulceration, resembling subcutaneous hemorrhages. On examining it considerable fluid, which was very foul smelling, exuded on pressure. Antiseptic lotion, consisting of 50 per cent. peroxide of hydrogen diluted with water, was ordered as a mouth wash. The child was told to rinse the mouth every half-hour, especially after eating. The gangrene extended to the outside of the cheek, involving, as can be seen by the illustration, almost the whole cheek. The picture was taken after the child had had its mouth and its cheek thoroughly cauterized by using the Paquelin cautery. Ichthyol was applied in the following manner:—

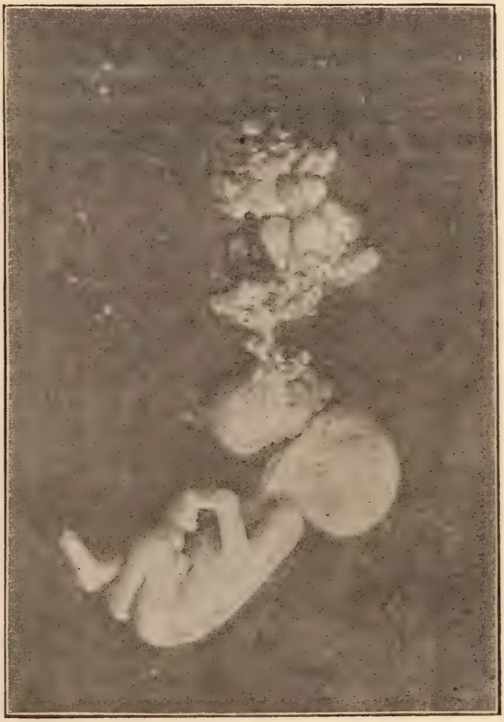


℞
Ichthyol and lanolin.....................M. ft. ungt.

S.—Apply over the whole of the gangrenous surface by rubbing the parts thoroughly, the same to be repeated at least three or four times a day. The ichthyol seemed to serve remarkably well in this case. The same was continued for about three weeks, when the child was discharged as cured.

EPIGNATHUS.

C. Jewett (*N. Y. Med. Jour.*, Mar, 22, 1902) says: The woman who gave birth to this anomaly had been attended at the labor by a midwife. She was of German birth, 24 years of age, and a primipara, she was delivered on June 23, 1900, at the seventh month of gestation, the tumor presenting. The fetus presented by the head. The mother gave a history of cough for a period of eighteen months. She failed in health rapidly after labor and died six months later of laryngeal and pulmonary tuberculosis.



Epignathus, according to Gould's Dictionary, 1894, is "a twin monstrosity in which the parasite is united to the superior maxillary bone of the autosite."

On examination, the specimen presented is found to consist of an immature female fetus from the widely gaping mouth of which protrudes a lobulated tumor. No other developmental defect is observed. In the erect position of the fetus the tumor would reach fully to the feet. Its entire bulk is nearly equal to that of the fetus itself.

The growth presents four lobes consecutively attached one to another by narrow pedicles. Each lobe except the proximal one is made up of numerous lobules. The tumor springs by a narrow pedicle apparently from the sphenoid bone. It has also some attachment to the lateral wall of the pharynx and to the jaw on the left and to the hard palate, mainly to the left of the median line. The attachments to the jaw, the palate, and other structures than the base of the cranium probably are secondary and unimportant. Its relation to the sphenoid bone, as will be seen, points to the real origin of the tumor.

The palate and the superior maxillary bones are displaced forward by the tumor. The nasal cavities, including the septum and the floor, are normally developed. On opening the cranial cavity, a cyst about 3 cm. in diameter and containing a thick, bloody liquid was found in the middle fossa of the basis cranii on the right. From the cavity of the cyst a a slender probe could be passed down through the base of the sella turcica, through the pedicle, and into the tumor below. The intracranial and the extracranial tumors were connected by the pedicle which passed through the patent hypophysis duct.

A few only of the lobules of the tumor were cystic, the contents being a thin, somewhat muddy liquid. Two of them contained old blood. Nearly all the lobules were either semi-liquid or in great part solid. The contents of the semi-solid lobules throughout the tumor were jelly-like connective tissue. Osseous tissue and cartilage were found in many of the lobules throughout the tumor, but no bone representing any normal type was observed. Smooth muscle fibers were present in several portions of the growth.

The origin of all this class of tumors is to be referred to displaced ectodermal and mesodermal cells. This view is set forth by Abel (*Gynecological Pathology*) and by Bandler, his pupil and translator (Dermoids and other Cysts of the Ovary: Their Origin from the Wolffian Body, *American Journal of Obstetrics*, January to June, 1901). It is shown that the embryonic structures are not all represented in the dermoids and teratomata of the ovary. No true internal organs, products of the endoderm, are found in them. The relations of their component structures are not those of a fetus. They have "nothing in common with a fetus."

Epignathi present essentially the same structures that are found in dermoid cysts and in teratomata of the ovary and other organs. Their nature and origin are substantially the same. They are developed from portions of the ectoderm and the mesoderm which have become displaced from their normal relations and trophic control. They are teratoid tumors of the base of the cranium, the product of aberrant ectodermal and mesodermal cells displaced in the formation of the hypophysis duct.

AFFECTIONS OF THE MOUTH AND THROAT ASSOCIATED WITH THE FUSIFORM BACILLUS AND SPIRILLUM OF VINCENT.

E. Mayer (*Am. Jour. Med. Sciences*, February, 1902) reports the following case:

Male, aged 23 years, called to see me on September 28, 1901, with the statement that he had had a sore throat for the past two weeks, which, while not interfering with his business, was daily getting worse. He had seen his family physician, who referred him to me. He was more or less subject to sore throat, which always yielded to gargles of chlorate of potash. His health had always been good, except for scarlet fever, measles and pertussis in childhood. His father had died of pneumonia at the age of 68, a sister at the age of 17 of the same illness, and two young children, a brother and sister, in infancy. His mother and a brother are living, and the family in all the collateral branches are healthy. His habits are excellent; he belongs to the higher walks of life; he is a moderate smoker; is tall, athletic and of fine physique, and has never had any venereal disease, nor has he been exposed to any infected person so far as he knows.

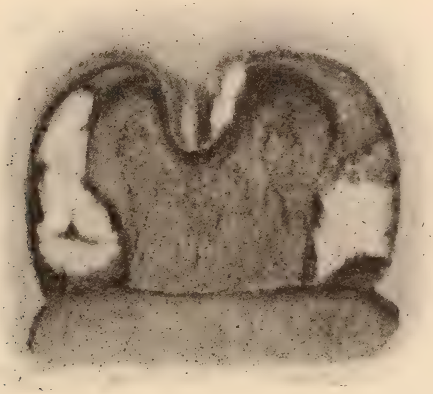


FIG. 1. Dr. Mayer's case of ulcero-membranous angina, with the fusiform bacillus and spirillum of Vincent, showing the tonsillar and palatal appearance.

The pain is of rather a mild type, salivation is present and glands at the angle of the jaw are slightly swollen. He prefers to swallow soft foods; the effort to swallow solids is too painful to persist in so doing.

Examination.—Right tonsil is the seat of three separate spots of white deposits, irregular in shape, reddened about the edges, easily detached, having an ulcerated and bleeding surface underneath. Between the membranous deposits is normal tonsillar tissue. Two similar deposits exist on the left tonsil. Although the membrane was readily detached, crumbling even when touched, it reformed very promptly. A few days later a few spots showed to the left of the uvula, and subsequently all the spots joined into a single mass of a pearly white color, and there was a line of deposit over the gums of both upper and lower teeth.

A specimen has been removed for microscopical examination and the bacillus and spirillum of Vincent found.

This affection seems to have a predilection for the adult male, and it is said to be due to the use of tobacco, eruption of a wisdom tooth, defective teeth or those covered with tartar, lymphoid tendency, syphilis and mercurial stomatitis. It is mainly an affection of the tonsils, but also occurs as a stomatitis. It is generally conceded that the presence of the bacillus of Vincent precludes the existence of diphtheria bacillus, de Stoecklin having pretty well established this fact. Because of our inability to inoculate with or to produce pure cultures of these bacilli or spirochetæ, we are not prepared to say that these are the sole controlling factors in the etiology of this affection, hence the title of this article reads "associated with" rather than "caused by" them.

These bacilli may readily be associated with or engrafted upon a syphilitic soil, Salomon having recorded two cases in which the bacillus and spirillum were found. After a time the characteristic deposits ceased, and with it the microscopical findings and undoubted mucous patches appeared.

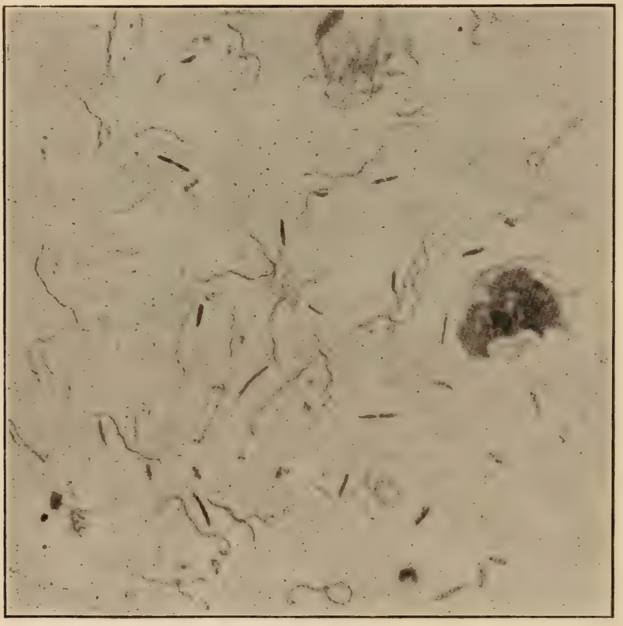


FIG. 2. Showing the fusiform bacillus and spirillum of Vincent, from Dr. Mayer's case.

The symptoms present are of the slightest kind, as a rule, the deposit existing for quite a time without being noticed. The lesion has a distinctly chancriform appearance at first, and while usually situated on the center of the tonsil, it is often on its most dependent portion. The deposit is white, soft on top, readily detachable and leaving an excavated and bloody surface. There is a certain amount of induration, the breath has a peculiar fetid odor, salivation is present, submaxillary glands are infiltrated. There is a slight pain in deglutition. In a case recorded by C. Nicolle there was an ulceration on the lip similar to those on the tonsils, and on the upper part of the face there were several edematous spots, painful to the touch, with erythema and discoloration of the skin. Niclot and Marotte mention a complication of appendicitis in one and pseudorheumatism in the other.

The borders of the gums, the lips and tongue are the principal seats of this affection in the mouth. The duration of the affection seems to be from eight days to four or six weeks. The prognosis is as a rule very good, but there is a tendency to recurrence. Like all other infectious maladies, it is susceptible of complications of a various and sometimes serious nature. One fatal case is recorded where there was an ulceromembranous stomatitis complicated by an infectious purpura. Endocarditis may follow the condition.

The treatment consists in the use of boric acid solution as a gargle, the local application of iodine and of peroxide of hydrogen.

Of utmost importance is the question of diagnosis, the two most important conditions differentiated being diphtheria and syphilis. In the former the exposure to contagion, the presence of temperature, cardiac depression and albuminuria will serve to differentiate, but in both the bacteriological diagnosis must be resorted to as definitely settling the matter.

Clinically this affection is exceedingly difficult to differentiate from any one of the forms of specific disease, and hence the importance of its careful study. This becomes necessary not only for the patient's future welfare, but also for his present needs, for it is a well known fact that mercury in any form interferes with the healing of an ordinary stomatitis.

It must also be borne in mind that syphilis may be present, and we may have a membranous deposit with the fusiform bacillus and spirillum associated with an underlying syphilis, and here the question arises as to what treatment should be instituted. To this he would answer, treat the angina first, and eliminate that, incidentally, if necessary, giving iodide of potassium internally until the angina is entirely healed.

In differentiating from a primary lesion or tonsillar chancre, the question of induration can hardly help us, for the reason that palpation in this region is almost a physical impossibility. The presence of cervical glands in syphilis may be of some help, as will also the history of exposure.

The duration of both may be long. In the secondary conditions the ulceration is much more apt to be deep and continuous. In the tertiary form gummatous lesions are more apt to be prevalent, and the history by this time has probably been sufficiently clear; but under all circumstances the final decision as to the presence of these bacilli and spirilli must depend upon the results of the bacteriological examination. Without the laboratory many an unfortunate would be promptly placed upon antisyphilitic treatment, doomed to take quantities of drugs for years and years, fearful lest at any time there may be on outbreak of a disease he never had; if unmarried, always doubting his right to take such a step, and if married, shunning those near and dear to him.

It is surely worth our while to make haste slowly and to examine every single case of membranous sore throat with all the means at our command, or, if not every case, surely those whose history is not clear and where there may be the least doubt.

TWO CASES OF CONGENITAL DISEASE OF THE LEFT SIDE OF THE HEART.

T. FISHER (*Brit. Med. Jour.*, March 15, 1902) reports the following cases:

CASE I.

Congenital Mitral Stenosis.

History.—A male infant, aged 15 months, was brought to the out-patient department of the Bristol Children's Hospital in August, 1901. The child is described as rather small, anemic and presenting some degree of cyanosis. There was no clubbing of the fingers. The mother stated that at the time of birth the child was very blue, and there had been difficulty in "getting warmth into it." Attacks of difficulty of breathing, in which the child was described as going of a "gray color," had been frequent since birth. The cardiac impulse was in the fifth intercostal space ¼ inch

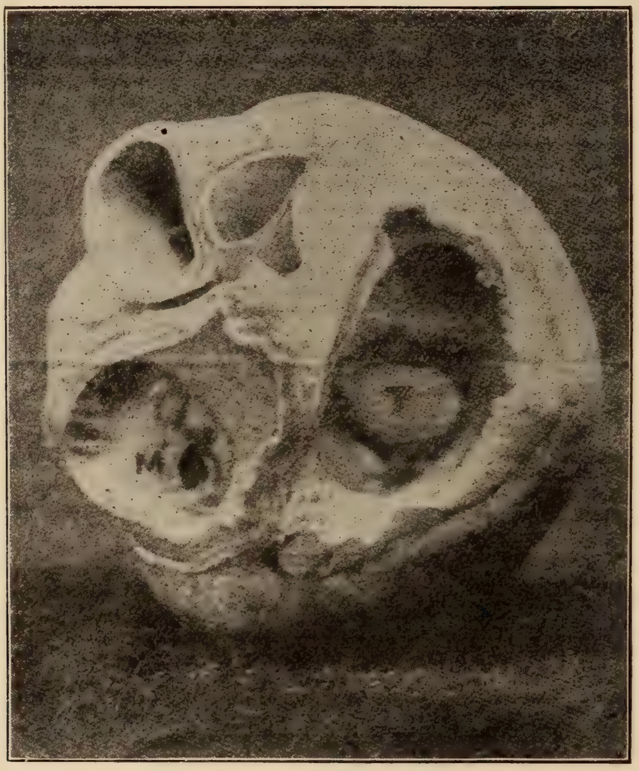


FIG. 1. Congenital mitral stenosis; the letter M is in the left auricle immediately outside the stenosed mitral orifice; the letter T is in the centre of the tricuspid orifice.

outside the nipple line. A rather high-pitched but not loud systolic murmur was audible all over the cardiac area, but was not conducted far outside the limits of the heart, and was not heard behind. At the base the second sound over the pulmonary area was described as sharp and "clicking" in character, but elsewhere it was rather dull. The only particularly unusual feature noticed was at the apex, where three sounds with something of a *bruit de galop* rhythm were audible. The pulse was again brought up. It had suffered from repeated attacks of severe dyspnea and appeared as if it would not live many days. The child was admitted under the care of Dr. Elliott, and died four days later.

Necropsy.—Only a partial examination made, the heart being removed by Dr. Forster, but I afterwards went down to the house of the parents and with their consent removed the aorta beyond the situation of the ductus arteriosus. The heart was much hypertrophied, and weighed 4¼ ounces. The enlargement was mainly of the right ventricle. The pulmonary artery was also fully double the aorta. On cutting open the auricles the tricuspid orifice was seen to be very large for a child of 15 months, while the mitral orifice was extremely stenosed. The triscuspid orifice measured nearly 2 cm. across, but the mitral only 5 mm. The segments of the pulmonary and aortic valves were normal. Neither the septum ventriculorum nor the foramen ovale was patent. The stenosis of the mitral orifice was of somewhat curious character. As in ordinary cases of mitral stenosis the chordæ tendineæ were much thickened and shortened, and the flaps of the valve drawn together, but there was also a perforated diaphragm resembling the diaphragm of a microscope, formed by a circular membrane, the base of which was attached to the bases of the mitral flaps. There was thus produced a double stenosis, one at the bases of the mitral flaps and the other at their extremities. The aorta showed a very marked constriction immediately above the point of entry of the ductus arteriosus. It measured there only ⅙ inch in diameter. The ductus arteriosus was patent but of small size, and would only admit a glass rod about the size of a lady's hat pin.

Family History.—The existence of mitral stenosis led to more careful inquiries being made into the medical history of the mother. She had not suffered from rheumatism either during her pregnancy or at any other time. None of the other children, four in number, had been affected with rheumatism One child had died apparently of diphtheria.

CASE II.

Congenital Aortic Stenosis.

History.—A female child, aged 4½ months, was brought to the Bristol Royal Infirmary in May, 1898, suffering from bronchitis and broncho-pneumonia. It was seen by Dr. Watson Williams, and admitted. The child died the following day.

Necropsy.—The body was of average size and fairly well nourished. Broncho-pneumonia and bronchitis were present in both lungs, but the condition of the heart was the chief point of interest. It was much enlarged, the enlargement being chiefly of the left ventricle, which measured 1¾ inch from apex to base, and its wall ⅜ inch in thickness. The segments of the aortic valve were found to be much thickened and adherent to one another. The right posterior segment was most affected, and was fully 2 mm. in thickness. It was adherent to the segments on either side, which were also irregularly thickened, but to a slighter degree. The thickening in the segments was situated chiefly upon the ventricular aspect. Above they were comparatively smooth. The chordeæ tendineæ of the mitral valve were also slightly thickened, but the orifice was not stenosed. The anterior muscular pillar presented a feature of some interest. It was more than half converted into fibrous tissue, and microscopic sections from other parts of the cardiac wall showed some fibrosis. The other valvular orifices were normal and the heart presented no other defects. There was nothing noteworthy in any of the other organs.

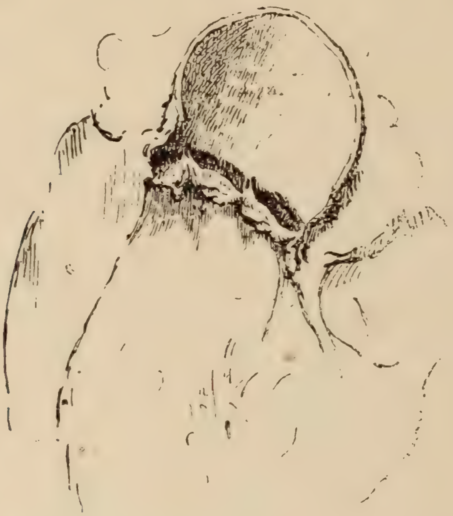


FIG. 2. Congenital aortic stenosis; the valve segments are thickened and adherent to one another.

Family History.—A visit to the mother elicited the interesting fact that about three months before the birth of the child she had suffered from pain and swelling in the left knee, which lasted a few days. She had not been kept in bed, but had been obliged to use a walking stick to aid her in getting about the house. She was about 36 years of age, but had suffered from no previous attacks of rheumatism.

CARE OF TUBERCULOSIS IN CHILDHOOD.

Mothers and guardians must be educated so that they will care for their children in such a manner that the little ones will not suffer from lowered vitality. The alimentary and respiratory tracts must be kept in a state of health. Children must be kept away from sources of infection as much as possible. Their food must be free from contamination. They must not be allowed to associate with, or live in apartments occupied by tubercular patients. They should not be allowed to play with pet animals that show any signs of illness. They should be taught never to kiss a stranger. Remembering that children are always playing on the floor, the nursery should be a bright, sunny room where the floor is flooded by sunlight. Besides, the floor either should be of hard wood or linoleum or some other material that can be washed with antiseptics. The mother and those entering the nursery, for that matter, all women, should discard the bacillus-bearing long skirt, which picks up the bacilli from the street and deposits them on the nursery floor. If mothers knew the dangers lurking in the long skirt, I do not believe that they, for the sake of style, would continue a custom which infects and kills their babes.

In houses where a separate room cannot be set aside for a nursery, a box 4 or 5 feet square can be fixed up, padded and lined with some washable material. In this the child can be placed and surrounded by his toys where he can amuse himself without infecting himself by the dust and dirt found upon the floor. It is not enough to educate parents and guardians. Tubercular patients must also be educated to care for their sputum and to be very careful about their personal hygiene. To this end we must evoke the aid of governments, municipal, state and national, that there may be uniform laws requiring notification of all tubercular cases and the proper instruction of those afflicted and those who must care for them. Those who are severely ill in families who are unable to care for them properly, should be removed to hospitals provided for that purpose. Sanatoria should be constructed for those that can be cured.

Special sanatoria at the seaside and in the country should be constructed for children who are tubercular. Results in children's sanatoria in Europe are very flattering. The one at Villiers, near Paris, cured 29 per cent. of the children who entered from 1889 to 1899. The one at Ormesson cured 34 per cent. of those from three to nine years, and 50 per cent. of those from seven to nine years.

Ewald, at the Berlin Congress, stated that the way to combat tuberculosis is to treat scrofulous children.

Thus we see that tuberculosis in childhood is a subject of great moment and that it takes a place second to none in the fight against the great destroyer. If it is during childhood that the bacilli make the inroads which later cause an outbreak of the disease in a majority of cases, we must center our preventive measures largely upon childhood. Scrofulous children must be treated more seriously than they have been in the past, and children must all be guarded and guided more carefully than is our wont.—F. M. Pottenger, *South. Cal. Practitioner.*

THE STIMULUS OF SUNLIGHT.

The effect of sunlight on population has been studied by M. Lugeon, in the Canton Valais, Switzerland, and a brief statement of his results is given in *Science*, June 5, 1902.

He finds that in the principal valley of the canton, between Martigny and the Rhone glacier, there is a marked difference in the populousness of the two sides of the valley; that most exposed to the sun having decidedly the largest population, and this does not appear to altogether depend upon the physical conformation, but he is inclined to attribute it mostly to the different exposure to sunlight. With one or two exceptions all the villages are on the sunny side of the valley and the dwellers on that side form a sort of aristocracy, being more prosperous and better educated and look with some contempt on their poorer neighbors on the shady side. In one village there are actual caste differences corresponding to the difference of exposure to sunlight of the dwellings. Of course, this may be largely a matter of voluntary selection; the abstract is not complete as regards possible physical differences in the peoples, but the publication of the study is suggestive from a medical as well as from a sociologic point of view.—*Jour. A.M.A.*

THE SUMMER'S WORK AMONG THE POOR OF NEW YORK.

Dr. Herman M. Biggs, Chief Medical Officer of the Department of Health, has submitted a report of the work of the summer corps of physicians, who attend the sick in the crowded tenement districts during the summer season, and a prospectus of the work planned for this year. It is proposed to increase the number of physicians from 42 to 75,and the work beginning June 15th instead of July 1st, as heretofore. To meet the extra expense this will necessitate Health Commissioner Lederle to ask the Board of Estimate for a special appropriation of $10,000, in addition to the $10,000 provided by the Legislature for the Borough of Manhattan, and $5,000 for Brooklyn. It is proposed to extend the work of the summer corps this year to include vaccination in the tenement houses and measures for the prevention of malarial fever, which, Dr. Biggs says, is increasing steadily in Manhattan and Brooklyn, despite the fact that it is distinctly a preventable disease.—*Jour. A.M.A.*

REGULATION OF MARRIAGE.

Dr. J. M. Emmert, at the recent meeting of the American Medical Association at Saratoga, used these strong and well-timed words:

It is desirable to have a national law pertaining to marriage and divorce. The unfortunate conditions of either, each State having its own laws, demand immediate action of Congress for the regulation of this great evil.

Marriage should be prohibited to blood relations up to the second degree, and to all persons of either sex affected with either congenital or acquired specific or infectious disease, such as venereal or pulmonary affections, confirmed drunkards, criminals, anarchists and the degenerate classes.

Each applicant for a marriage license should present a certificate from a medical examiner, appointed for that purpose,stating that the applicant is not affected with any disease or habit that would be derogatory to procreation of offspring. When parents are tainted with specific disease, it is almost invariably looked for and expected with the children. A taint of hereditary drunkenness, insanity, suicide, epilepsy, idiocy, deaf-mutism, cancer, syphilis, gout, rheumatism, tuberculosis or scrofulous diathesis in the blood, are all symptoms of degeneration, likely to be itensified by propagation in succeeding generations, until the tainted family becomes extinct. Intermarriage with those tainted diffuses weakness, deformity and abnormality through the social structure, deteriorates and contaminates all who issue from such unions.

Intermarriages of distinct diseases are as dangerous as the union of two consumptives. A typical case, cited by Richardson, will corroborate this statement: "A young man, of marked cancerous proclivity, married a woman whose parents had both died of pulmonary consumption. The married couple had a family of five children, all of whom grew up to adolescence, sustaining at their best but delicate and feeble existences. The first of these children died of lupus; the second of simple pulmonary consumption; the third, owing to tubercular deposit in the brain, succumbed from epileptiform convulsions; the fourth, with symptoms of tubercular brain disease, sank from diabetes, the result of the nervous injury; and the last, living longer than any of the rest, namely, to thirty-six years, died of cancer. The parents in this instance survived three of the children, but they both died comparatively early in life—the father from cancerous disease of the liver and the mother from heart disease and bronchitis."

While we have some States prohibiting consanguinous unions, there are others that have not kept abreast with modern civilization, and allow the marriage of near kin. There is not a physician who is entitled to that name who does not know the physiologic reason for prohibiting consanguinous marriages; but for the benefit of those who do not know, I will state that besides degenerations, a marriage between persons closely allied in blood is apt to produce an offspring feeble in body and a tendency to insanity in mind.

As to confirmed drunkards, I can only repeat what Plutarch says—"One drunkard begets another;" and Aristotle adds: "Drunken women bring forth children like unto themselves."

Dr. Howe, in a report to the Legislature of Massachusetts, says: "The habits of the parents of 300 of the idiots were learned, and 145, or nearly one-half, are reported to be known as habitual drunkards." Howe cited a case in which the parents were drunkards, and had seven idiotic children.—*Journal A. M. A.*

RECTAL EXAMINATION.

Dr. J. M. **Frankenburger** writes as follows: The first point in the examination to be considered is the position of the patient. The lithotomy position is preferred by some, some use the knee-chest position, but the most satisfactory position is that known as the proctoscopic position. This position is obtained by placing the patient in the Symms position and then lowering the right side and head.

To prevent the patients from feeling as though they were slipping off the table, I pass a strap across the right shoulder and fasten it to the left side of the table. An ocular inspection should always be made of the anus, when fissures, eczemas, external hemorrhoids, discharges, external openings of fistulas, etc., can be diagnosed.

The finger, well greased, should be introduced into the rectum. Notice first whether there is a strong or a weak sphincter. A polypus, stricture, ulcers, can readily be made out. In the male the prostate should be carefully examined, and in the female, the position, size,etc,,of the uterus can be readily outlined.

In making a digital examination, at first introduce the finger only to the distal joint, examine carefully, and gradually introduce the finger further, until the full length of the finger is within the rectum. By this method one is much less apt to overlook a pathological condition than where the finger is at once introduced to its full extent. The introduction of the entire hand within the rectum is a proceeding which should be done very cautiously. In ordinary cases I have never had any difficulty in introducing my hand (8½ inches in circumference) in the gut. Just how far the hand can reach is a disputed question. Professor Simon,of Heidelburg, claims that the hand can be made to enter the descending colon,but I have never been able to do so, although I have repeatedly tried on the cadaver.

Every proctologist seems imbued with the idea that he must originate a rectal speculum, and while they undoubtedly all have their good points, a great many of them are far from satisfactory. The most satisfactory speculum I have found is Matthews' or Symms'. With either of these the mucous membrane of the rectum can be exposed to view while their introduction is painless. Kelsey's speculum is very handy for the general practitioner, inasmuch as it can be folded, and, occupying a very small space, can be easily carried in a satchel with other instruments.

Light can be thrown into the rectum by a head mirror, or by an incandescent light with a condenser.

Cook's trivalved speculum I have found to be of much more service when used as an operating speculum than as an examining speculum.

When we remember that at least three-fourths of rectal diseases lie within 2 inches of the anus, it will be very readily seen that any of these specula will enable us to see the seat of trouble. For trouble deep within the rectum, or sigmoid, I use a tubular speculum or set of specula devised by Dr. J. R. Pennington, of Chicago. It consists of a tube, a plunger, and a glass cover. The tubes all having the same size collar, the glass cover will fit any of them. Just in front of the cover, a small projecting aperture is made, into which a rubber tube is fitted, and the rectum can then be inflated with air by a bulb. The method of examination will be found to be very serviceable, as it more thoroughly exposes to view the mucous membrane. A light can be thrown in by aid of a head mirror, or a small electric lamp can be adjusted in the lower end of the tube. By this speculum the entire rectum and lower part of the sigmoid can be inspected. Houston's valves can also very easily be seen, which cannot easily be done by the valve speculum, as the blades press the valves back against the rectal walls, practically obliterating them. These tubes can be made of any length and will answer the same purpose as the ordinary Kelley tube. The condition of those valves should be ascertained, as by recent investigations they undoubtedly play an important part in the pathology of the rectum, producing constipation and kindred troubles.—*Kansas City Med. Rec.*

THE NEW YORK CHARITY ORGANIZATION SOCIETY'S WORK IN THE PREVENTION OF TUBERCULOSIS

Is deserving of all praise. The success of the organization in bringing about tenement-house reform in New York has encouraged it to undertake a similar task in reference to the study of tuberculosis,its prevention and the cure of those afflicted. It has enlisted the coöperation of such leading physicians as Biggs, Janeway, Bryant, Lederle,with other prominent citizens, and purposes a carefully planned and thorough-going crusade. First will be an exhaustive study of the social aspects of the disease, the relation of infected living apartments and patients, the therapeutic power of diet, light, and pure air, the usefulness of instruction in precautions, etc. There are at least 20,000 consumptives in the city, and the wisdom of a change in environment is to be tested in as many cases as possible. The education of patients and their friends as regards the disease, without unduly arousing fear, is to be undertaken. A great many people have misunderstood the motives and methods of the work of the Charity Organization Society, but such results as it has won in tenement-house reform and the movement it is now undertaking against tuberculosis will leave no room for doubt as to the beneficence and effectiveness of its labors.—*American Medicine.*

INFLUENCING THE LIVER BY THE DIAPHRAGM, AND LIVER MASSAGE.

WALZ (*Muenchener Med. Woch.*) analyzes the effect of deep inspiration and expiration on the liver and asserts that both have a powerful effect in stimulating the circulation in the liver. Moebius first called attention to this means of influencing this organ and semi-facetiously entitling it " massage of the liver." Forced expiration has a marked effect on the emptying of the gall-bladder.

De Frumerie has recently published a systematic study of actual massage of the liver. He states that direct massage stimulates the extrahepatic circulation and reduces the congestion in the portal veins. It also stimulates the functions of the liver cells in acute and chronic insufficiency of the organ. He witnessed the disappearance of sugar from the urine in certain cases of diabetes, also improvement in gout and in passive congestion of the organ in cardiac affections and in malaria, and in certain cases of catarrhal icterus and gall-stones after the acute attacks were past. Direct massage is contraindicated, he states,in cases of carcinoma, fatty cirrhosis, amyloid degeneration,echinococcus or abscess in the liver. He observed hemorrhage and cardiac collapse after too abrupt application of the massage. Moebius's respiration massage, on the other hand, is entirely harmless.—*Jour. A.M.A.*

CONTUSION OF THE ABDOMEN.

M. R. female, age 18, was watching a display of fireworks, when a large bomb burst some distance from her. A piece of flying iron, about the size and shape of half an orange, struck her on the right side, tearing off the crest of the ilium, part of the gluteus muscle, and making a very large wound in her side. She was brought to the hospital, operated upon, and recovered with very slight impairment of the muscles and an almost imperceptible limp. The iron missile, after doing this damage, passed on and struck a young man who was standing behind, and at one side of her, in the abdomen. He paid no attention to it, but helped the injured girl and aided others in getting her into the ambulance. He then walked home, probably a mile distant, and went to bed. The next day he complained of some pain in the abdomen, but it was not considered serious at the time; to be brief, the young man died in a few days, of what I judge was general peritonitis, though I did not see the case.

Had there been an exploratory laparotomy there might have been a chance for life, but it serves to illustrate the importance of exploration in these cases that seem obscure. I could report a number of cases in which laparotomy has been performed, but it would only occupy valuable time. I have tried to be brief and to merely present this subject so that it could be discussed and we could all learn something in regard to its importance and its treatment. To sum this subject I would say:—

1. Contusions of the abdominal wall are deceptive in their character, as regards the viscera.

2. The seriousness of these cases is often overlooked.

3. Exploratory operation is safe, and should be performed in the majority of cases showing evidences of internal injury.

4. Operate early.—Dr. Walter Lathrop, in *Inter. Jour. of Surgery.*

THE BLOOD-COUNT IN MUMPS.

Pick (*Wiener Klin. Rundschau*) relates that more than 623 cases of mumps have occurred in Prague during the last 71 weeks, and the epidemic has included an unusual number of adults. The blood-count in ten cases examined showed that the number of leucocytes was constantly normal. The lack of hyperleucocytosis may aid in differentiating mumps from orchitis of other origin, gonorrheal for instance, which was accompanied by a leucocytosis of 8,000 to 16,000 in four cases examined. Its absence in mumps classes the disease as a purely serous exudation in the group with serous pleuritis or articular rheumatism.—*Jour. A.M.A.*

PEDIATRICS

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EDITORIAL COMMENTS.

The Early Diagnosis of Pleuritic Effusions

The importance of the early diagnosis of pleuritic effusions is especially appreciated by the pediatrist who, unfortunately, sees many neglected cases of this kind in hospital and consultation work. To enunciate again the conventional rules for determining the presence of fluid in the thorax would be entirely superfluous in this place, but we should like to call to the attention of our readers some very valuable practical points brought out by Dr. James K. Cook in an article with the above title published in the *Medical News* for April 12, 1902. Dr. Cook begins his article by stating the great similarity that often exists between acute empyema and pneumonia, the patient "is often taken with a chill followed by fever, pain in the side, catching respiration, cough and a certain amount of prostration. There is limitation of movement on the affected side of the chest with an increase of movement on the opposite side. Fine crepitation may be elicited by auscultation. Finally in a day or two dullness becomes apparent."

He then points out how, having too hastily pronounced the case pneumonia, the wary physician, by taking refuge in the diagnosis of pleuropneumonia, may sometimes escape the odium of having made a wrong diagnosis; provided the case does not fall into the hands of someone else before he himself discovers the presence of fluid. "The severity of the initial chill and the subsequent range of temperature are not always a safe guide. In some cases of empyema the rigor is of great severity and the fever which follows is altogether as high as in a sharp attack of pulmonary inflammation. In adults we should be wary of committing ourselves in cases of supposed pneumonia unattended by rusty or brick-dust sputum. This is one of the most constant and important evidences of real pneumonia and its entire absence gives a strong inference of pleuritic and not pulmonic trouble. The variation in the respiration-pulse ratio is important; normally we find four or five pulse-beats to one respiration; now, if the respirations so increase that the ratio is three to one, two to one, or perhaps one to one, the case is probably one of pneumonia.

"A marked increase of the semicircumference of the affected side may be taken as absolute evidence of accumulation of fluid. The contrary, however, does not always hold good; sometimes the fluid does not lead to an expansion of the chest, but makes room for itself by forcing the diaphragm down and by crowding the lung upward and against the vertebral column. The sound lung now doing most of the work receives more aid, which fact may lead to an actual expansion of the normal side of the chest. Again, retraction of the diseased pleura may even result in a shrinkage in the measurements of the affected side.

"Displacement of the viscera, especially of the heart, is a sign of the utmost value in effusions. If the accumulation be on the left side, the heart is carried over toward the sternum, and the further it is so pushed the more significant of effusive pleurisy it becomes. If the disease be on the right side, a larger effusion is required to displace the heart than if it be on the left. When this occurs, it will be found that the organ is raised as well as displaced to the left. At the same time the liver is borne downward, in some cases as low as the umbilicus."

"The percussion note in children is seldom absolutely flat in pleuritic effusion, but may more properly be termed dull. Sometimes a transmitted tympanitic note resulting from gaseous distention of the bowels and intestines may be elicited over accumulations of liquid in the chest. The sense of resistance offered to the percussing finger is as valuable a sign as the percussion note itself. Liquid opposes a much more unyielding front to a percussion stroke than does air or even a consolidated lung, and the hard, solid sensation to the finger receiving the percussion blow, attended by more or less pain, is very significant. Another point in this connection, is somewhat ignored of late, viz., the shape of the upper line of percussion flatness in pleurisy with effusion. It should be borne in mind that this line does not form an exact horizontal or hydrostatic level, but presents certain curves which will be found to appear with great constancy in accordance with the amount of fluid present. In slight effusions, say from 2 to 3 inches in depth, the upper boundary of percussion dullness or flatness begins at the spinal column, passes outward for a short distance and then curves downward, having an upper convex line of dullness. In medium effusions extending up from the bottom of the pleural cavity from 3 to 6 inches, the lines of flatness beginning at the vertebral column passes horizontally outward for perhaps 2 or 2½ inches, then rises to the upper axilla or even to the shoulder and passes downward and forward to the anterior border of the pleural cavity, forming the letter S curve of Garland. In great effusions the liquid may rise completely to the summit of the pleural cavity, the line of flatness being continuous with the chest itself. In other cases of extensive effusions the upper line of the fluid may be found in front just below the clavicle. In this situation the line extends gradually upward as we percuss outward from the sternum, forming a curve with the concavity upward.

"If, with all these methods, we are still left in doubt as to the nature of the case, we should not hesitate to employ the exploring needle." T.

ORIGINAL ARTICLES

MODERN METHODS EMPLOYED IN THE PREVENTION AND TREATMENT OF TRACHOMA AND OTHER FORMS OF CONTAGIOUS OPHTHALMIA.*

By Karl Koller, M.D.,
New York City.

THE discoveries of the last twenty years have made great strides toward an insight into the causes of infectious diseases. As elsewhere in medicine so in the field of ophthalmology, the newly acquired knowledge seemed to promise a radical change in the therapeutic methods—a promise, however, which was only scantily fulfilled. The methods of today are not radically different from those of the antebacteriological era but have been organically developed out of them. Therapeutics are largely empirical, mostly ahead of their times and their rational understanding is frequently lagging behind them. The bluestone was used 2000 years ago by Greek physicians in the treatment of trachoma and today it is the one remedy which we would not miss in the treatment of that malady. It is in the prevention of contagious diseases that the new discoveries show their practical value.—In 1879 Neisser discovered that the gonococcus is the cause of gonorrhea and three years later Credé laid before the profession his preventive proceeding whereby the dreaded infection of the eyes of the new-born infant can be prevented almost to certainty.

In the following the treatment in gonorrheal ophthalmia of the adult and the new-born, in diphtheritic conjunctivitis and in trachoma will be described as these are the most important representatives of contagious ophthalmia. The ordinary acute mucopurulent conjunctivitis which is the lightest form of contagious ophthalmia, under ordinary conditions self-limiting and easily yielding to treatment, will not be further considered.

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* Paper read before the meeting of The New York Academy of Medicine on June 5th, 1902.

Gonorrheal Ophthalmia of the Adult.

The stage of incubation after contagion has occurred is of varying duration, according to the virulence of the poison, as has been shown by the experiments of Piringer. It may last from a few hours up to three days, until the first symptoms show themselves. If we have to deal with a case of supposed infection not yet presenting any symptoms, as will frequently happen in hospitals where nurses or physicians expose themselves to the danger of infection, or in the case of nervous individuals suffering from gonorrhea who are possessed of the fear of having infected their eyes, we will instil a drop of 2 per cent. nitrate of silver solution into the conjunctival sac. We will do so only if there are no symptoms of inflammation or irritation present, and under that condition we can safely expect preventing the outbreak of the inflammation. If the symptoms to be enumerated presently have begun showing themselves the instillation of the silver solution is useless and may be harmful.

These are: As first symptoms the eyelids become reddened, hot and edematous, frequently to such a degree that the patient has difficulty in opening them. There is a constant escape of watery discharge, which first resembles tears but soon assumes a peculiar character. The color of it becomes reddish like meat water and it contains fibrin, as it will draw out in threads between the fingers; it contains flocculi of pus. If the patient's eyelids are separated it will frequently bridge over the palpebral fissure like a soap bubble. If these symptoms are met with in a patient the suspicion is justified that we have to deal with a genuine case of gonorrheal ophthalmia, and a bacteriological examination of the discharge ought to be made at once, which, in most cases, will reveal the presence of gonococci. Meanwhile, and even if the result is negative, the case ought to be treated as if it were one of gonorrheal ophthalmia.

The first concern ought to be to prevent propagation of the infection to others and to limit it to the infected eye of the patient if only one eye has been infected. The patient is isolated in a well ventilated room and put to bed. The room should not be dark. The light may be tempered, as strong light is painful to the patient, but the light should be sufficient for closely observing all the necessary manipulations. Insufficient light in the presence of contagious matter is dangerous to the attending surgeon and nurses. Doctors and nurses are provided with protecting spectacles which are put on before entering the sick-room. If only one eye of the patient has been infected the other eye is covered with a protective bandage—rubber adhesive plaster, not being permeable for moisture, makes the best outer covering. For enabling the patient to see, a watch-glass or mica-plate may be used, fastened over the eye by means of rubber plaster. The eye should be kept under this protective bandage until all danger of contagion is past, that is, until the discharge has stopped. Even after that time I have been able to find some gonococci from between the folds of the caruncle, but we may be justified in assuming that they are not very virulent. It will be necessary from time to time, that is, every three or four days, to change the protective bandage. The eye is, at it were, in a moist chamber and begins discharging mucus, which will glue the lids together during sleep, prevent their opening completely and will make the patient exceedingly uncomfortable.

If the symptoms are not further advanced than above described, which is on the first or second day of the actual disease, cold should be applied to the affected eye in the form of cotton pads which have been previously saturated with a solution of boric acid or liquor Burrowi diluted 1-10 or 3 per cent. boric acid solution and which are cooled on a cake of ice. A large number ought to be prepared for frequent change to accomplish lowering of the temperature of the lids. The cold applications should not be applied continually, but intermissions of one-half to one hour ought to take place after one hour's application to prevent paralysis of the blood vessels and stasis. The eye ought to be thoroughly cleansed of all discharge as frequently as it accumulates. This is the most important factor in the treatment. The discharge with the progress of the disease becomes frequently astonishingly copious. I have treated cases where it was necessary to rinse the eyes every 15 minutes day and night. The more thorough the rinsings are the less frequent it is necessary to repeat them. It is to the credit of Kalt, of Paris, to have introduced his grands lavages, that is, irrigations of the conjunctival sac with large quantities (up to 1 quart) of a 1:5000 solution of permanganate of potash; instead of the permanganate a solution of 1:2000 formalin or sublimate 1:5-10,000 can be used. The solution must be warmed beforehand and the pressure under which it flows should not be great—about 1 or 1½ feet—but it must be sufficient for dislodging and washing away all particles of discharge lodged in folds of the conjunctiva. It is the best to use these irrigations every two hours day and night. These copious irrigations are very far superior to the rinsing by pressing out cotton swabs and to the use of eye-droppers, and the results are very much better.

It must be remarked that all the infected dressings should be made innocuous at once. This is best done by throwing them into a slop-jar filled with 5 per cent. carbolic acid, 1-1000 sublimate solution or plain water. The contagious discharge loses its power of infecting if diluted with water in the proportion of 1:100. Meanwhile, on the second and third day the symptoms may have progressed further, the lids becoming more swollen and infiltrated; sometimes they are so hard that it is impossible to evert them. The conjunctiva of the lids and the fornix becomes fleshy; grey patches of exudation appear in it and the conjunctiva of the eyeball becomes infiltrated and swollen, so that it rises over the edge of the cornea like a wall; until this stage is reached it takes as a rule two to three days. The first stage of the disease is called the stadium of infiltration and it lasts two to three more days.

It will frequently happen that the cold applications are not very well borne. Then it is time to discontinue their use and apply hot applications. Nothing tends more to soften the hard infiltration of the lids and relieve the tension than these hot applications. They must be applied for one-half to one hour at a time, continually, as hot as the patient can stand them; the intervals between applications to last one hour and a half to two hours. If swelling and hardness of the lids and the chemosis become excessive the outer canthus can be cut, which frequently brings great relief, partly by diminution of the tension, partly by the abundant bleeding which follows it. As long as the lids are hard, and especially as long as there are grey patches of exudation on the inside of the lids, cauterization with nitrate of silver is not advisable and may even be harmful, as it gives rise to a recurrence of the infiltration. It should not be used before the second stage of the disease is reached, the stage of pyorrhea, in which the lids are soft, the conjunctiva velvety and the discharge creamy and very abundant. Then the lids ought to be everted and carefully brushed with a 2 per cent. nitrate of silver solution. This may be done once or twice a day, but not before the eschar of the previous application has been thrown off. Nitrate of silver is the sovereign remedy in gonorrheal ophthalmia. In later years protargol and a number of other organic silver compounds have been used, but none of them has been able to take the place of the silver nitrate. These organic compounds do not coagulate and the coagulating power is just the chief factor of its efficiency. Nitrate of silver has a strong bactericidal power; besides it necrotizes the superficial layers of the epithelium in which the germs are lodged; thus repeated applications free the conjunctiva of the infectious germs. Meanwhile the copious irrigations are to be continued and should not be stopped during the night. The frequent handling of the eye taxes the strength of the patient a great deal, and the nutrition should be taken care of. The stage of pyorrhea is of varying length —from one to two weeks. Within four to six weeks the eye returns slowly to its normal condition, mostly for a long time there remains some chronic inflammation and thickening of the conjunctiva over the lids and of the folds. It is hyperemic and velvety through swelling of the papillæ and uneven. A dreaded complication of gonorrheal conjunctivitis is ulceration and necrosis of the cornea with all its consequences. The cornea is the sooner affected the more intense the process, and the stronger the infiltration of the lids and the chemosis. Frequently it occurs in the first stage and then is of sinister prognosis. The corneal affection during the stage of pyorrhea is not quite so dangerous. Ulcers of the cornea with their sequelæ, such as prolapsus of the iris, are to be treated according to general principles, with the sole exception that bandaging of the eye is out of question, for the disadvantage arising from blocking up discharge. Prolapse of the iris should not be cut off as long as there is danger of infection; it has been known to be followed by panophthalmitis.

Gonorrheal Ophthalmia of the New-born.

The infant is infected during its passage through the infected vagina. It was thought for some time that rinsing of the vagina with antiseptic liquids, irrigations before the confinement, would prevent the infection. However, this has not much effect. Credé introduced his proceeding in 1879 in his obstetric clinic, where he previously had had 10.8 per cent. of cases of ophthalmia. His preventive proceeding brought the figure down to 0.1—0.2 per cent., and is therefore one of the greatest triumphs of preventive medicine. If Credé's proceeding could be generally introduced the ophthalmia of the new-born could be altogether abolished. The proceeding is this: Immediately after the child is born the closed eyes should be wiped off with a clean linen rag; then the child is bathed, but his eyes must not come in contact with the water of the bath. After the child has been dressed the eyes are cleaned again with a clean linen or cotton rag and a drop of 2 per cent. of nitrate silver is dropped in each eye.

The ophthalmia of the new-born shows itself with similar symptoms, as in the adult, in the greatest number of cases on the third day, sometimes up to the fifth day. The graver cases appear already on the first day. The symptoms are the same as in the adult only less severe. The prognosis is generally good, and it is conceded that if a child comes under treatment with cornea intact the eyes can be saved with certainty. An exception are cases with malnutrition and failing health; in these the eyes will perish in spite of expert treatment. As soon as a case of ophthalmia comes under treatment nitrate of silver ought to be applied at once in 2 per cent. solution. The lids ought to be well everted so that the fold of the fornix becomes visible and ought to be brushed with the solution until they are well whitened. This ought to be repeated every day. Some eye surgeons make the application twice a day, but in most cases one application will be sufficient. Every half hour, day and night, the lids ought to be separated and the discharge washed away by expressing a cotton swab saturated with boric acid. After the discharge has diminished in quantity it will not be necessary to do this so frequently. As a rule it is not necessary to apply cold applications; if they be applied, ice should not be placed on the lids, but simply cold cotton pads. Kalt originated his method of *grands lavages* specially for the ophthalmia of the new-born. He irrigates the eyes two to three times a day with 1:5000 permanganate solution, using 1 quart of the solution each time. According to his reports and others who have used his proceeding, the results are very good. But considering that the treatment with nitrate of silver and the simple rinsing away of the discharge insures a good result most eye surgeons will stick to this method, which is better in the hands of lay people than the irrigator.

Gonorrheal ophthalmia of the infant when treated rightly from the start yields readily to treatment, so that within about a week it will have subsided save some slight residue of discharge.

Diphtheritic Conjunctivitis.

Diphtheritic conjunctivitis is rare in this country but rather common in Northern Germany. There are two distinct forms, the lighter croupous and the severe diphtheritic. The difference is clinical rather than etiological. Both may be caused by the Klebs-Loeffler bacillus but also by streptococcus, gonococcus and other germs. The lighter croupous form is frequently caused by pneumococcus, sometimes by the Koch-Weeks bacillus; even simple chemical irritation may produce it. Mostly children between the ages of two and eight years are affected, frequently such as are suffering from diphtheritic throat and nose affections. Even if this is not the case the eye affection alone is sufficient to cause serious systemic manifestations. The gland before the ear will almost always be found swollen.

Diphtheritic conjunctivitis is one of the severest forms of ophthalmia, and the swelling and hardness of the lids reaches the highest degree; in severe cases the cornea is mostly lost without hope; as a rule only one eye is affected first and the other has to be protected, as in a case of gonorrheal ophthalmia in the adult. If diphtheritic conjunctivitis is suspected a bacteriological examination ought to be made at once; if the case seems severe it will be prudent to use antitoxin without waiting for the result of the culture test. As diphtheria is contagious, not only by actual contact, as gonorrheal ophthalmia, but most likely also through the air, the patient ought to be isolated and nobody but physician and nurse allowed in the sick-room. Especially other children ought to be removed from all possibility of infection. Hot applications should be made from the beginning, in the manner described in gonorrheal ophthalmia of the adult, to promote circulation and resolution of the exudate. Likewise the discharge ought to be removed as frequently as it accumulates. After the stage of infiltration has lasted five or six days the lids become soft and it is time to use nitrate of silver. This may be done very cautiously in the beginning and only a 1 per cent. solution ought to be used and must be stopped at once if membranes or infiltration reappear. For preventing the formation of symblepharon in cases where the diphtheritic exudate has been thrown off leaving raw surfaces, vaseline may be introduced into the conjunctival sac. If the cornea has become affected the corneal ulcers are to be treated according to general principles. Prolapse of the iris should not be cut off as long as the danger of infecting the wound exists.

Trachoma.

It is impossible to speak of this disease with its manifold forms and sequels within the limits of a short paper, therefore only a few of the more important points will be touched upon. Prophylaxis could do a great deal against the spreading of trachoma. Every physician ought to enlighten his patients as to the contagious nature of their disease, ought to explain to them the gravity of the trouble and ought to tell them how they and their friends can be protected from infection by avoiding contact with the sufferer. No other person should share bed, towel, or washing utensils with an individual suffering from trachoma. There is no doubt that a great deal remains to be done. In the treatment of trachoma we prefer the present surgical methods, but we could not do without the two trusted remedies—nitrate of silver and sulphate of copper. The first is better suited for cases with moderate inflammation and with discharge, the latter more for the cases with chronic infiltration. Cases of acute trachoma, which are rather rare nowadays, and in this country ought to receive the treatment accorded to cases of acute blenorrhea, that is cold applications, irrigations. Cauterizing even with nitrate of silver is as a rule not advisable; scarifications bring great relief. Of the different surgical proceedings, the expression with roller or other forceps is now in almost universal use. It is well fitted for fresh cases with plenty of follicles and a conjunctiva which is not atrophic. Wherever the conjunctiva is atrophic expression must not be done, as the atrophic membrane cannot stand the injury, and sloughing with subsequent shrinkage and xerosis may be the consequence. Expression ought to be done under general anesthesia. It is well to extensively scarify the conjunctiva to allow the follicles easier exit; then every part of the conjunctiva, especially the fornix, ought to be exposed for close examination and thorough expression of the follicles. After the expression a ½ per cent. solution of nitrate is applied to every part of the conjunctiva.

A bandage should be applied and kept on over night, which will prevent the edematous swelling. Expression does not remove the small follicles imbedded into the conjunctiva, and therefore treatment ought to be continued for some time after the operation, until the conjunctiva is entirely smooth. A 2 per cent. solution of $Cu\ SO_4$ in glycerine (pure or diluted with water) and used 4–6 weeks, will in most cases perfect the entire disappearance of follicles and papillæ. In cases where atrophy and cicatrization of the conjunctiva exist with simultaneous presence of follicles one may express the follicles between the nails of the two thumbs, which is much less injurious than the forceps and a much more efficient proceeding than waiting for the follicles to be absorbed. The presence of pannus is no contraindication to expression, nor does the pannus require especial treatment. Where pannus exists and no follicles in the conjunctiva are present, which never happens in a fresh case but frequently in old cases of many relapses, cutting of the blood vessels at the edge of the cornea with a sharp knife will make the pannus quickly disappear. In all cases of acute inflammation, whether the conjunctiva is hypertrophic or atrophic, liberal scarification of the conjunctiva will be found useful. If for all cases of trachoma a universal remedy ought to be selected, which is certainly impossible, the nearest approach to it would be a solution of copper sulphate in glycerine used as eye-drops two to three times a day.

In tapping the chest, it is well to remember that a line drawn horizontally from the nipple around the chest passes over the sixth intercostal space midway between the sternum and the spine. This rule may prove serviceable in stout people in whom it is difficult to count the ribs.—*Inter. Journal of Surgery.*

THE LAWS OF THE STATE OF NEW YORK RELATING TO CONTAGIOUS DISEASES OF THE EYE, THE RESULTS OF THEIR ENACTMENT AND THE DESIRABILITY OF FURTHER LEGISLATION.*

By FRANK VAN FLEET, M.D.,
Surgeon to the Manhattan Eye and Ear Hospital; Professor of Diseases of the Eye, New York Post-Graduate Medical School and Hospital; President of the Medical Society of the County of New York; Chairman of the Committee on Legislation of the Medical Society of the State of New York; Fellow of the New York Academy of Medicine, etc.

THE subject of contagious diseases of the eye is one of great importance to the people of this country and one about which much has been written. Much more will be written concerning it before those who should be most interested awake to a proper realization of its importance and adopt the measures necessary to reduce its unfortunate results to a minimum.

The part assigned to me in this discussion is divided into three parts:—

1. The laws of the State of New York relating to contagious ophthalmia.
2. The result of these enactments.
3. The desirability of further legislation.

In order to avoid unnecessary repetition and to cover the ground in as concise a manner as possible we will consider, if you please, the subject after the manner of this division.

1. The Laws of the State of New York Relating to Contagious Ophthalmia:

We are indebted to the Roman historian, Tacitus, for the statement that "when the state is most corrupt then the laws are most multiplied." Whatever may have been the exact meaning of this remark, if we are able to judge of the moral status of the State of New York by the number of laws relating to contagious eye diseases, we are forced to the happy conclusion that we are in a condition of commendable purity. A search through the statutes reveals the existence of two laws relating to diseases of the eye; if there are more the writer has been unable to find them, having had every opportunity to do so.

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* Part of a symposium on contagious eye diseases at the New York Academy of Medicine, June 5, 1902.

The first of these laws is that formerly known as Chapter 633 of the laws of 1886, to be found in the Revised Statutes as Chapter 667 of the laws of 1900. This law was enacted through the efforts of members of this Academy and others†, and it should be, and is, a source of great pride to the people of this community that there are enough public spirited citizens in every profession, and in all walks of life, who will give time and energy to secure the enactment of laws for the protection of those who, through ignorance or inability, cannot protect themselves from disease and other evils which may threaten them.

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† The Committee of the Academy of Medicine which worked for the enactment of this law consisted of:—

Dr. C. R. Agnew,
Dr. David Webster,
Dr. Richard H. Derby,
Dr. Charles Stedman Bull,
Dr. Gouveneur M. Smith,
Dr. A. Jacobi.

Associated with this committee were:—

Dr. E. L. Oatman, Nyack, N. Y.,
Dr. C. S. Merrill, Albany, N. Y.,
Dr. John J. Milhau, of the State Board of Charities,
Arthur G. Sedgwick, Esq., of State Charities Aid Association,
Elbridge T. Gerry, Esq., President of Society for Prevention of Cruelty to Children.
James Gallatin, Esq., President of New York Society for Improving the Condition of the Poor.

And in the published list of names of those who worked for the enactment of the law in securing statistics we find:—

Henry D. Noyes,
Edward G. Loring,
D. B. St. John Roosa,
E. Gruening,
Oren D. Pomeroy,
Thomas R. Pooley,
Peter A. Callan,
H. S. Oppenhimer.
Joseph A. Andrews,
W. F. Mittendorf,
J. B. Emerson,
W. S. Dennett,
Ashbel Barker,
H. A. Huntington,
W. Oliver Moore,
F. J. Bowles,
J. B. Isham,
F. N. Lewis,
N. J. Hepburn,
G. F. Carey,
F. W. Ring.

And the following inspectors of the Health Department:—

J. B. Linehan,
G. F. Morris,
J. E. Stillwell,
W. A. Ewing,
Valentine Mott.

Many of the above are dead, but their memory lives in this and many other acts for the public good.

This law provides for the appointment of physicians to institutions for the care of dependent children, and can be found in sections 213 and 214 of the statutes above mentioned. It reads after this fashion:

> SECTION 213.—Every institution in this State, incorporated for the express purpose of caring for children, except hospitals, shall have a regular physician of its own choice and in good professional standing, whose name and address shall be posted conspicuously near the main entrance. His duty shall be to examine each child admitted, and certify in writing that the child has no contagious or infectious disease, especially of the eyes and skin, before the said child can be admitted to contact with other children. This certificate must be filed with the commitment and other papers. The child must be placed in quarantine until discharged therefrom by the physician.
>
> SECTION 214 provides that the physician shall make monthly reports of the physical condition of the children in the institution and of the existence of contagious or infectious diseases, especially of the eyes and skin.

The only other law relating to contagious eye disease is one for the prevention or detection of the purulent inflammation of the eye of the new-born infant, known as ophthalmia neonatorum, when in the care of a midwife. This law was originally worded so that it was impossible to secure convictions under it; it was finally repealed and re-enacted as part of a general law for the protection of children. This law provides that any midwife or nurse having the care of an infant shall report any redness or inflammation of the infant's eye to the health officer or to some legally qualified practitioner of medicine within six hours after such redness or inflammation appears; failure to do which is punishable by a fine of $100 or imprisonment for a period not exceding six months, or both fine and imprisonment.

There are no other laws in this State relating to contagious or infectious diseases of the eye, especially. New York City has another enactment which enables the proper authorities to formulate rules and regulations for the control of contagious and infectious diseases of whatever kind and nature. This is the power vested in the Board of Health, to which I will refer later.

The second phase of my subject is: The Results of the Enactment of Laws Relating to Contagious Ophthalmia.

This phase has been dwelt on by previous speakers and it will be necessary for me to say but little concerning it. We have heard the statistics obtained from various quarters relative to at least one of the laws I have mentioned. This is a State law, and how it has been enforced throughout the State I have no means of knowing. That it has been enforced, to some extent at least, in this city, there is no doubt. The figures taken from the reports of the institutions in the Borough of Manhattan for the care of dependent children demonstrate, from the falling off in the number of contagious eye diseases, the benificent effect of the law quoted, and must be especially gratifying to our friends now living who worked for its enactment.

The law compelling the calling of a physician by midwives and nurses in the event of inflammatory conditions existing in the eyes of infants in their care has also had a beneficial effect. A number of convictions have been secured for neglect in this particular on the part of midwives, and I believe the fact that such a law exists is now known to most of the women who follow the calling of midwifery. I will say for the benefit of all who may not know it, that the Society for the Prevention of Cruelty to Children will prosecute any midwife who has violated this law, if physicians and others who may have knowledge of such violation will acquaint the Society of the fact.

Conditions seem to indicate that some influence has been at work in the State of New York to reduce the proportion of blind people in the total population. According to the figures furnished by Dr. Lucien Howe, the United States census for 1890 showed 72 blind for every 100,000 people in the State of New York, while the figures given us by Dr. Derby seem to indicate that the number has been reduced to 1 in every 2,500, which would mean a total of 40 to every 100,000 persons, being a reduction of 33 in every 100,000.

I believe more than one factor has contributed to this reduction. The people themselves know more than they did 10 years ago, and among others who have increased knowledge we may number ourselves. Not only is the average of professional attainment greater, owing to the laws governing the practice of medicine, but also those who are especially familiar with eye diseases know more than they or their predecessors knew. The non-medical members of the community are more likely to give prompt attention to ocular troubles than formerly because of increased knowledge on their part. The increase in hospitals and clinics devoted to the care of these special diseases; the growth of schools for post-graduate instruction for physicians; increased vigilance on the part of the United States authorities in refusing admission to immigrants afflicted with trachoma; all these, and possibly more factors, have entered into the reduction of the proportion of blind persons in the State of New York.

The third phase of my topic, The Desirability of Further Legislation, is one for serious consideration.

I would say, as far as New York City is concerned, there is, in my opinion, no need for further legislation for the control of contagious eye diseases. Whether this is true of other parts of the State I cannot say, but I see no reason why it should not be if other local boards of health, or the State Board of Health, have powers equal to those possessed by our local board.

Sir Edward Coke, an English jurist, who died in 1634, noted alike for his brutality of speech and his legal acumen, is quoted as saying: "Reason is the life of the law; nay, the common law itself is nothing but reason." When authority was vested in the Health Board of this city to enact whatever regulations it deemed necessary to control contagious diseases the lawmakers certainly acted in the light of reason. I am not prepared to say the Health Board should be allowed to continue indefinitely in the possession of all the privileges it now enjoys, but I do believe it is necessary this Board should have very great discretionary power, and that the right given this Board to create a sanitary code, which it can alter and amend, as the necessities arise, is both wise and just.

It would seem as if nearly every avenue of contagion, including contagious eye diseases, was sufficiently safe-guarded by existing law.

The Sanitary Code gives the Health Board the right to exclude any person known to have any disease which is contagious *or dangerous to the public health*, or who has been in contact with any person having such a disease, whether they come from a neighboring city, county, or state, or from a foreign state. It makes no difference where one may have obtained authority to come into this city, the authority of the Health Board over-rides all other authority. Under this code the Health Board has the right to declare any disease contagious, *or dangerous to the public health.* The State therefore has safeguarded the city to a remarkable—although not unnecessary—extent, by placing in the hands of the Board of Health power broad enough and arbitrary enough to enable the Board to keep out any disease detrimental to the public health of which it may have knowledge.

I am convinced that one of the most fruitful fields for the dissemination of contagious eye disease is to be found in our public schools. This, too, is a field that can be controlled by the Health Board. The regular corps of inspectors may or may not be able to properly diagnose the presence of all forms of contagious eye affections. I am not prepared to say inspectors can be obtained for the salary paid the regular inspectors now employed in our public schools, who will be familiar enough with this class of diseases to make their services sufficient to properly remove this danger to the eyes of our children attendtending the public schools. I have no doubt, however, that the necessary funds can be obtained if the Health Board can convinced that the danger is great enough to warrant the outlay.

Another source from which many cases of contagious eye diseases come is the public bath. During the summer months, which is of course the only time public baths are patronized, we have many cases, especially in our free clinics, of purulent, and therefore contagious, eye diseases, which date from a visit to one of these baths. Personally, while I have seen a great many of these bath house cases, I have never seen disastrous results follow; one can easily imagine what might happen, however, as a consequence of neglect in such a case. I am not prepared to recommend a remedy, but would suggest that it might be a subject worth investigation by the proper authorities.

Dr. Lucien Howe, of Buffalo, who has advocated measures for the prevention of blindness with greater activity perhaps than any other person in this State and to whom much credit is due for his disinterested and public-spirited work, has urged the enactment of a law making Credé's method, of dropping a solution of nitrate of silver in the eyes of infants compulsory on the part of physicians in lying-in hospitals. There is much to be said in favor of this method of treatment, but the profession is not agreed on the advisability of any enactment which would specifically endorse any one method of treatment of this or any other disease. The general impression is that the method of treatment to be employed in any particular affection should be left to the judgment of the practitioner, who is supposed, because of his education and training, to be able to exercise proper and intelligent discrimination. It would seem that to compel physicians to comply with a standard as high as ours, and then to compel the employment of a particular remedy in a particular event, leaving no room for the employment of individual judgment, would be illogical, to say the least.

Dr. Walter B. Johnson, of Paterson, N.J., writing on the subject of ophthalmia neonatorum, says the law enacted in New Jersey to prevent the spread of this disease is practically inoperative, and expresses his belief that the only way to secure its enforcement is to amend the law by having this disease placed on the list of contagious diseases, compelling all who have knowledge of the existence of a case to report it to the health authorities. In New York City the health authorities can compel this without further enactment.

The statute-books have many laws within their covers which are not enforced. Irving, I believe it is, is quoted as saying, "the only certain thing about law is its uncertainty," and possibly he had something of this sort in mind when he made this statement. It is not new laws that are needed so much as the enforcement of the laws we now have, and here I might remark that the uncertainty of the enforcement of many of the laws of which we have knowledge is due, I believe, to the fact that it is nobody's particular business to see that they are enforced.

I believe the enforcement of all laws relating to the public health should be entrusted to the Health Board, and the function of the medical profession should be to advise the Health Board and to insist on the enforcement of laws designed to protect the public health. The medical profession can mould public opinion, and when the profession does not agitate needed reforms in matters relating to the preservation of the public health it fails in its duty and deserves all the reproach and contumely the community may be pleased to heap upon it.

The Health Board and the medical profession should walk hand in hand for the protection of the public health, and for this purpose we need a thoroughly organized and united Health Board, which, in this city at least, we now have, and a thoroughly organized and united medical profession, which unfortunately we do not have.

I do not at present see the necessity of any new laws for the protection of the public health, believing those we now have are sufficient for the purposes of today. I do recommend a closer union and a clearer understanding between the medical profession and the city, county and state authorities, in order that we may accomplish what should be the great object of our profession—the safe-guarding of the community against disease and the avarice and dishonesty of those who prey upon the ignorance and superstition of a confiding people.

This can only be brought about by the entire profession uniting in one strong central body, which shall be the recognized mouth-piece of the profession. Such a body acting in concert with the health authorities could easily bring about all the needed legislation for the proper protection of the public health.

The writer desires to acknowledge his indebtedness to:—

Mr. Champe S. Andrews, of the law firm of Hill, Sturcks & Andrews, Counsel to the Medical Society of the County of New York, and to Mr. William Mack, of the American Law-Book Company, for information concerning the laws relating to eye diseases.

Reference has also been made to reprints of articles by Dr. Lucien Howe, of Buffalo, entitled "Purulent Conjunctivitis of Infants and Blindness in New York State;" reprinted from the Transactions of the Medical Society of the State of New York, February, 1897.

"The Present Condition of Legislation for the Prevention of Blindness," reprinted from the Bulletin of the American Academy of Medicine, 1894.

"Credé's Method for the Prevention of Purulent Ophthalmia of Infancy in Public Institutions," reprinted from the American Ophthalmological Society Transactions, 1897.

"An Arithmetic and Geography Lesson on Blindness in New York;" read before the Medical Society of the State of New York, in January, 1897.

"How the Cost of Purulent Ophthalmia to the State of New York Might be Lessened;" reprinted from the *Buffalo Medical Journal*, 1898.

To the article by Dr. Walter B. Johnson, of Paterson, N.J., entitled, "The Prevention of Blindness by the Adoption of Laws Compelling Hygienic Precautions;" reprinted from the Transactions of the American Public Health Association, Vol. XXV.

SOCIETY REPORTS

PHILADELPHIA PEDIATRIC SOCIETY.

Stated Meeting, May 13, 1902.

The President, Dr. SAMUEL McC. HAMILL, in the Chair.

Dr. ALEXANDER H. DAVISSON showed a case of **cretinism** that had been exhibited to the Society the year before. He also showed photographs taken at the previous time, before treatment was begun. The child had been thought by the mother to be perfectly well until 4 months old, after which its health seemed rather indefinitely poor and the mother noticed that the tongue was thick. When first seen the child presented the evidences of rickets and marked signs of cretinism. It was given thyroid extract, beginning with gr. ¼, t.i.d. During the year it had passed through a very severe attack of measles and prolonged digestive disturbance, associated with severe prolapse of the bowel, and during the hot weather it nearly died. As exhibited the last time, however, it seemed in good general condition; its expression was bright and cheerful, while it had previously been typically cretinoid; its hair had grown soft and curly; its skin was no longer dry or rough and the color was more normal; the voice was softer; the mouth was no longer held open and the tongue was not abnormally thick; the fatty deposits about the clavicles had disappeared; It had gained 9½ pounds and grown 3¼ inches in height, the circumference of the head was 1 inch greater and the child had got all of its teeth. It still exhibited the remnants of rickets and had not entirely lost its cretinoid appearance, but was strikingly improved.

Dr. Davisson also exhibited a case of **paraplegia** in an infant 3 months of age. The child was born in a breech presentation, and considerable traction had to be made upon the legs in order to effect delivery. The child presented a flaccid paralysis of the lower limbs; the abdomen was flaccid and sank at each side and there were no contractions of the abdominal muscles. At regular intervals, corresponding to the respiration, there was a striking sinking-in of the chest-muscles on the sides at about the the region of the diaphram. The bowels could be moved only by enema. The distended bladder could be palpated, and pressure caused a flow of urine,—an incontinence of retention. The knee-jerks, the plantar reflex and the abdominal skin reflexes were all absent. Anesthesia extended to the xiphoid anteriorly and above the second dorsal vertebra posteriorly. The pupils reacted freely to light; there was no cranial nerve palsy, and examination had shown no spinal bone lesions; the feet were warm, and there was no atrophy of the legs or thighs. The diagnosis was thought to be a transverse myelitis between the second and third dorsal segments. The breech presentation and delivery by the feet was considered to have been connected with the production of the condition.

Dr. J. P. Crozier Griffith said that he had seen the last case at the dispensary of the Children's Hospital and that the condition was certainly a most remarkable one. In a fairly careful watching of pediatric-journal literature for a number of years he had observed reported no instance at all analogous to it: and there seems to be little reference to it in text-books. Paralysis of the upper extremities due to injury at birth is not uncommon; but that of the lower appears to be rare. He was struck by the curious sinking-in of the costal margin, together with the entirely passive state of the abdomen during respiration and the active movement of the upper part of the chest. It gave the impression at first that the diaphragm was paralyzed, but this was certainly not the case because the lesion in the cord was clearly too low to have involved this muscle, which is innervated from the fourth cervical segment. The condition was probably due to the lack of tonicity of the abdominal walls on account ot which there was a failure of proper support to the upper portion of the trunk.

In connection with the absence of knee-jerks, Dr. Griffith referred to a paper by Dr. Walton, of Boston. This writer refers to the fact that in complete destruction of a portion of the cord, as in cases of fracture of the spine, the reflexes may be entirely lost instead of increased, as generally occurs in injury or inflammation—such, for instance, as is so generally exemplified in Pott's disease and the like. In cases of paraplegia of the new-born, it appeared that the cause was most often hemorrhage into the spinal canal, at least, this seemed to be the statement in text-books.

He regarded the prognosis in the case exhibited as very bad. It was hardly possible that the child could live long. Any intercurrent disease, especially of the respiratory tract, would be likely to prove fatal.

Dr. Eshner said that in a considerable experience at the Orthopedic Hospital he did not recall having seen a case resembling this, and that the condition must be very rare. He agreed with Dr. Griffith in thinking that the lesion was probably hemorrhage into the hemorrhage into the spinal cord or its membranes. An analogy might be drawn with the cerebral palsies seen in the new-born after difficult labor.

In connection with the case of cretinism, Dr. Eshner referred to his having seen perhaps a dozen or more cases of this disorder at the Orthopedic Hospital in the course of some nine years, and stated that they exhibited a tendency to go backward if the administration of thyroid was stopped. Therefore thyroid gland has to be administered continually in these cases; and the speaker had grown to believe that it is preferable to use small doses over long periods, rather than large doses over shorter periods. Large doses cannot be administered long because of the occurrence of toxic symptoms.

Dr. W. Reynolds Wilson, in connection with the case of paraplegia, referred to the fact that recent opinion tends to the view that there is little danger of dislocation of the vertebræ, in contradistinction to fracture of the body of the individual bones during delivery. The chief danger lies in fracture; hence, dislocation was not the probability in this case, and the condition was probably one of hemorrhage, either with or without fracture.

Dr. Packard showed a case of **enlargement of the liver and spleen** in a congenital syphilitic. The child had been repeatedly admitted to the Pennsylvania Hospital for acute attacks of tonsillar infection. The fascies were typically syphilitic, the bridge of the nose was sunken and broadened, and there was eczema; but there was no interstitial keratitis, and "Hutchinson's teeth" were not present. The spleen extended almost to the middle line, and the edge of the liver was felt at the umbilical level. Just beneath the ribs there was a broad prominence on the surface of the liver, possibly due to the presence of a gumma. The history threw no light upon the question as to whether the disease was congenital or accidentally acquired.

Dr. Edsall referred to a case which he had reported to the Society about a year and a half before. That child was also a girl of 14, who had signs of congenital syphilis with great enlargement of the liver, and with evidences of splenic and renal amyloid disease. The child certainly had gummata of the liver. One mass in the lower part of the right lobe of the liver, was as large as the half of a small orange; it was very rough and hard and extremely tender. There was a smaller mass about the size of an English walnut in the epigastrium, apparently in the left lobe of the liver. The masses were similar to those seen in large cancerous metastases in adults, and the patient was sent to St. Christopher's Hospital with the diagnosis of malignant growths of the liver. These masses disappeared with the utmost rapidity, under the energetic use of specific treatment, and within three or four weeks they had decreased to the size of small nodules. After continued treatment the surface of the liver became practically smooth, and the liver and spleen ultimately decreased in size, until nothing abnormal could be determined in either organ. The albumin and casts in the urine, however, persisted; and the child had a constant tendency to the return of edema, although she seemed otherwise to be in good condition.

Dr. HAMILL showed specimens from a case of **heart disease with enlarged spleen.** The specimens were removed from a boy aged 9 years. The patient had been under Dr. Hamill's care for a year and a half. He had had chicken pox, measles and pneumonia prior to this time. He was first seen in an attack of chorea.

An examination of the heart at this time showed a systolic apex murmur without cardiac enlargement. Six months later he returned to the dispensary with a mild attack of acute articular rheumatism. A physical examination at this time showed the heart enlarged and a pre-systolic murmur added to the systolic murmur at the apex. Six months later he returned to the dispensary with a decided increase in the size of his heart; the same murmurs present, and marked evidences of failing compensation. An examination of the abdomen at this time showed a very great enlargement of the spleen. Several blood examinations were made for malarial organism with negative results. The blood-count showed nothing abnormal. The patient never had any elevation of temperature. He was in good physical condition until within a few moments of his death, when he complained of vertigo, became unconscious and died a few moments later. The autopsy showed a very much enlarged spleen, which on section showed numerous small, roundish spots about the size a millet seed, resembling miliary tubercles. The liver was very much enlarged. The heart was decidedly and generally enlarged. On opening the heart the only valvular found involved the mitral valves; this orifice was reduced in size. The valves were infiltrated and had some vegetations adhering to them; some of the chordæ-tendinæ were destroyed, and adherent to their free ends were small vegetations.

There was a large area of inflammatory thickening in the posterior wall of the auricle and adjacent to the valves. The vegetations on the valves were examined for microörganisms with negative result.

The microscopical examination of the spleen and enlarged lymphatic glands showed a marked proliferation of the malpighian corpuscles and the lymph follicles.

Dr. GRIFFITH asked how Dr. Hamill accounted for the sudden death.

Dr. MILLER said that there seemed to be but little rightsided enlargement of the heart, and that the obstruction had apparently been of but short duration.

Dr. Hamill replied that the sudden death was probably due to cerebral embolism. There were some very loose vegetations on the valves, and embolism might readily have occurred. He also noted that the mass on the valves had been stained for microörganisms with negative results. The obstruction had certainly been of recent development. When first seen the child had regurgitation, and the signs of obstruction had developed while under observation. There was very little post-mortem evidence of enlargement of the right ventricle; and indeed only slight enlargement of the left auricle.

Dr. Hand read a paper on the **positive diagnosis of meningitis, particularly tuberculous, by lumbar puncture.** He referred to the difficulty often met with in the diagnosis of meningitis, not only when meningeal symptoms occur in the course of infectious diseases, but also when they are part of an illness obscure in nature. When the clinical existence of meningitis is clear a second difficulty arises with regard to the variety, upon which the prognosis largely depends. Inflammation of the meninges always alters the character of the cerebrospinal fluid, the resulting changes being diminution or absence of sugar, increase of albumin, and, except in simple serous meningitis, the presence of leukocytes, bacteria and frequently endothelial cells. The variety of leukocytes present has often been referred to as of great diagnostic value by some observers; an excess of leukocytes indicating a tuberculous process, while polynuclear leukocytes are in the majority in other forms. Some have been unable to determine this. The writer's own experience is that in some fields of a given slide a differential count is often difficult or impossible, owing to evident distortion of the cells during the process of mounting: but that where the handling had been very careful and the nuclei are distinct, a differential count is of value. It does not, however, have the positive value that the finding of specific germs does, and positive conclusions can only be drawn from positive results. In 30 specimens of cerebrospinal fluid examined 21 contained tubercle bacilli. The other cases comprised one of cerebral fever followed by recovery, 2 cases of pneumococcic meningitis—one of normal fluid and one of suspected brain tumor, the three remaing being meningites of undetermined origin, probably septic, the clinical course not indicating tuberculosis. The estimation of sugar has some value, as a small amount had been found in the serous meningitis and in those cases of tuberculous meningitis tested with phenylhydrazin, the other cases of meningitis not responding to that test. Fehling's solution does not seem delicate enough for the amount of fluid at the disposal of the examiner. Differential counts in the tuberculous cases showed all of them to have an excess of lymphocytes; whils the other cases, except the serous, the normal and the brain-tumor cases, gave an excess of polynuclears, the exceptions having no cellular elements. The percentages of lymphocytes in the tuberculous cases ranged from a minimum of 65 per cent. to a maximum of 99.4 per cent. without any marked features in the course to explain this range.

The technique of the examination is of the highest importance, that used by the writer being the following: The fluid should be collected in a sterile test-tube plugged with cotton and allowed to stand until a strand of fibrin has formed; this usually forms in from two to six hours, and settles in the bottom. A straight platinum needle—not a loop—is touched to one edge of the fibrin, which is then transferred to a slide, care being taken to tip the test-tube so that the fibrin constantly floats in fluid. The excess of fluid is then drained off from the slide and the remainder evaporated by gentle heat; it being not only unnecessary, but usually fatal to the success of the examination to press the fibrin between two slides. The film is fixed by heat, stained in the usual manner and then carefully gone over in the mechanical stage. Since adopting this method the writer believes he has been successful in 100 per cent. of the tuberculous cases.

Dr. Packard said that in a fair experience with lumbar puncture he had seen but three or four cases in which fluid could not be obtained, although there was no doubt that the needle had entered the dural cavity. In one case autopsy, performed later on the same day, showed that the reason for the negative result of the puncture was the fact that there was no excess of fluid in the canal, but that the whole pia mater was covered by an exudation of lymph. This patient died of epidemic cerebrospinal meningitis. In some cases, therefore, the failure to obtain fluid may be due to the character of the exudate. The speaker believed that lumbar puncture was not only of diagnostic value, but was also a good therapeutic measure. He mentioned two cases in which most striking improvement occurred at once upon the removal of a small quantity of fluid. He had seen no harm result in any case but in several cases had seen Cheyne-Stokes breathing and convulsive movements stop upon the withdrawal of fluid. He believes that sometimes it certainly does good, and that in some instances it may at least hasten recovery and perhaps determine its occurrence.

Dr. Griffith said that he thought that the puncture of the spinal cord, especially in cases of tumor of the brain, could do harm in only one way. Where there was some tendency to opisthotonos or semi-voluntary resistance on the part of the child, a good deal of force might be required to bend and hold the subject in the proper position to allow of easy puncture. The struggles which might ensue could readily exhaust the strength of a child in a dangerously low condition. He hap seen this result in one case in the Children's Hospital, in which powerful hypodermic stimulation was required to overcome the exhaustion.

With regard to the relief which the procedure might give, we could by no means count upon this. He had repeatedly seen temporary improvement follow. In the case to which he referred, the condition was distinctly better after the exhaustion had disappeared. In another case the first tapping produced pronounced relief; the child, who had been lying unconscious and speechless, uttered its mother's name shortly afterwards. A second tapping in this same case brought back to the patient the power to swallow, which had been entirely lost. A third tapping, however, did no good at all. In another case, apparently one of chronic meningitis, in which the fluid showed absolutely nothing and in which the child exhibited convulsions almost constantly, day after day, this symptom invariably ceased after puncture was performed and continued absent for a considerable time.

It was doubtless by relief of the pressure that the operation did good. We might, however, reach the spinal canal without relieving the pressure on the brain. This was prbably due to the blocking up of the connection between the two by plastic exudate. In some of the cases that he had operated upon the early punctures relieved, whereas, later ones failed. In one case the fluid escaped under such pressure that it spurted strongly up Dr. Griffith's arm; yet the child showed no improvement whatever.

Dr. Griffith believed, however, that there was no question that the effort should be made in every case to give the child at least temporary relief by doing a lumbar puncture. Permanent relief he had not yet seen, although such cases were on record.

Dr. Westcott believed that we should pay more attention to the importance of the findings in the fluid in their relation to prognosis. It is perfectly well established that a definite prognosis in meningitis can be better established by determining the nature of the organism causing the disease than in any other way. If it is found to be tuberculous the prognosis, of course, is practically fatal. Dr. Hand had referred to cases in which tubercle bacilli had been found and which had been reported as having recovered, but Dr. Westcott directed attention to the fact that there had been no reports of the subsequent course of these cases. While we may admit the fact that patients occasionally may apparently recover from an attack of proven tuberculous meningitis there is a great probability that the recovery in such cases is only temporary. Certainly the prognosis in tuberculous meningitis may be stated, in general, to be absolutely bad. That an influenzal meningitis is, on the contrary, usually favorable. In pneumococcus meningitis, on the other hand, the prognosis is stated by Councilman to be almost certainly fatal. These facts are examples of the difference in the prognosis when the condition is caused by different organisms. It would seem to be very important to make cultures of the spinal fluid from every case of meningitis coming under our care; so that reliable data as to prognosis may be obtained and definite conclusions based upon observations in a large number of cases reached.

Dr. D. J. M. Miller asked Dr. Hand whether absolute clearness of the fluid is incompatible with the presence of a tuberculous meningitis. By clearness he meant a perfectly watery appearance. He had found lumbar puncture most valuable in excluding meningitis. His experience had been chiefly in adults, and particularly in those cases of meningismus which are observed in pneumonia, typhoid fever and the like. In these cases the negative result of a puncture is often a most important aid in reaching a conclusion as to diagnosis and prognosis.

Dr. Myer Solis Cohen referred to a case of dermatitis gangraenosa which he had seen while a resident physician in the Philadelphia Hospital. Lumbar puncture had been carried out in this case; and it was noted that after the fluid had been kept for about three days, it had turned green. At the time this was thought to be due to an atmospheric infection; but the child died and autopsy showed a general infection with the pyocyaneus.

Dr. Edsall asked Dr. Hand whether he would positively state his ideas concerning the value of the cytodiagnosis of meningitis—as to whether he thought it definitely possible to distinguish between tuberculous and non-tuberculous meningitis by the character of the cells present. A number of authors make the absolute statement that the diagnosis can be positively made in this way, others state that this is not possible. Bendix, for instance, refers to one case which was positively determined to be non-tuberculous meningitis, which the cells were chiefly lymphocytes. The latter is inclined to consider that the presence of large numbers of lymphocytes in the exudate is chiefly dependent upon the chronicity of the process, or in other words, upon the lack of acute activity in the inflammatory process, and Patella believes the so-called lymphocytes in pleural effusion to be merely altered endothelial cells. Whether this is true or not, Dr. Edsall considered that an absolute diagnosis cannot be made in this way. Other serous exudates—those in the pleura, for instance, at times contain a majority of lymphocytes when tuberculosis is absent. There has been a good deal of discussion about the positive diagnosis of tuberculosis from a study of the circulating blood, which, of course, has ended in the decision that such a method is entirely impracticable. It would seem probable that it would also be impracticable to make an absolute diagnosis from a study of the cells in the exudate; although there certainly are comparatively few conditions which would be likely to provide the same microscope findings as these seen in tuberculosis of the meninges, and these few conditions are comparatively rare. As to recovery from tuberculous meningitis, while this must be extremely rare, the possibility of its occurrence must be admitted; and Dr. Edsall referred to a case that he had seen in Widerhofer's Clinic, in Vienna, in which there was a history, two years before, of what had then been diagnosed as tubercular meningitis. The child had apparently recovered entirely, but ultimately died of tuberculosis. At autopsy the meninges exhibited the lesions of an old meningitis, and so distinguished a pathologist as Kolisko had stated that he considered the meningitis to be tuberculous. One other similar case had occurred in the practice of Franz, at that time in charge of the Children's Hospital in Vienna.

Dr. Hamill referred to a case that had died several years ago in his wards at St. Christopher's Hospital with tuberculous meningitis. Three or four years previously the child had had an attack that was thought to have been tuberculous meningitis. At the autopsy an old meningitis was found, and the lesions were studied microscopically by Dr. Kelley; there was extreme thickening of the meninges, evidently chronic, but it was impossible to determine whether or not the older lesions were tuberculous.

Dr. Hand, in reply to Dr. Miller's question as to the clear ness of the fluid, stated that if it is not examined at once, it may, in many instances, be perfectly clear, except for the slight strand of fibrin that forms, and that in so-called serous meningitis, the fluid is always water-clear. As to the character of the cells found in the exudate in their relation to the duration of the disease he mentioned four cases showing over 90 per cent. of lymphocytes, in which the course previous to the puncture had been only from three to ten days. He believed that it is extremely important to follow the technique which he hag described in the search for tubercle bacilli. In this way he considers it possible in almost all instances to find tubercle bacilli if they are present. If they are not present in the fluid that is obtained by the puncture it cannot of course be absolutely determined that these bacilli are actually absent from the meninges; but if they are present in the fluid he considered the method detailed by him almost certain to lead to their discovery.

BOOK REVIEW

ABOUT CHILDREN.—Six lectures given to the nurses in the Training School of the Cleveland General Hospital in February, 1896. By Samuel W. Kelley, M.D., Professor of Diseases of Children in the Cleveland College of Physicians and Surgeons (Medical Dept. Ohio Wesleyan Univ.); Pediatrist to the Cleveland General Hospital; Consulting Physician to the Cleveland City Hospital; President, 1896–97, Ohio State Pediatric Society; Editor Cleveland Medical Gazette, Cleveland: The Medical Gazette Publishing Company, 312 Prospect St., 1897, pp. 180. Price, postpaid, $1.25 net.

These six lectures contain much valuable information for nurses, for whom they were primarily intended, but medical students also, and even practitioners of medicine, for that matter, will be able to glean no inconsiderable information therefrom. The author sets forth what he has to say in a terse but very lucid manner, which might well be imitated by many who have more ambitious aims. The very simplicity of his style proves him a master of his subject. This small volume of course does not pretend to be an exhaustive treatise on the nursing of children. but if it serves to help nurses and students to observe and think for themselves it will have fulfilled no mean mission.

The first chapter is devoted to the peculiarities of the anatomy in infancy and childhood.

The second concerns growth and development and physiology.

The third chapter treats of various pathological conditions, deformities, diseases, accidents and injuries.

In the fourth chapter symptoms are interpreted, while the fifth treats of the general management of sick children and the nursing in special diseases.

The sixth, considers pasteurizing, sterilizing and modifying milk, and artificial feeding conditions. General remarks upon the disposition, habits and management of children are also to be found here.

The typographical work is good and the general appearance of the volume is very attractive. T.

PRACTICAL NOTES

Stools in Infants.

Much may be learned by a careful investigation of the stools of infants with reference to increasing or diminishing the various kinds of food. The normal infant stool is smooth, yellow, homogeneous and about the consistence of thin mush. The following may be considered abnormal types:

1. Green Stools.—Stools can only be considered green when that condition is evident immediately upon their passage. They are due to a fermentation which is doubtless the result of bacterial action. All stools become green a certain time after passage, caused by oxidation of the air.

2. Curdy Stools.—Curdy lumps may be produced by undigested casein or fat. The former are hard and yellowish, while the latter are soft and smooth, like butter.

3. Slimy Stools.—These are the result of catarrhal inflammation. When the mucus is mixed with fecal matter, the irritation is high up in the bowel, but when flakes or masses of mucus are passed, the trouble is near the outlet.

4. Yellow Stools.—These are seen in depressed nervous conditions, especially in the hot days of summer, when the bowel is relaxed and the inhibitory fibers of the splanchnic nerve do not act to advantage.

5. Very Foul Stools.—These are caused by decomposition of the albuminoid principles of the food.

6, Profuse, Colorless, Watery Stools.—Profuse, colorless, watery stools, with little fecal matter, are doubtless caused by an infective germ, akin to that of Asiatic cholera. This is known as cholera infantum.

It is rare to see one of these types by itself. With the exception of the last, they may be seen in all combinations.—Chapin, *Jour. A. M. A.*

Salicylic Treatment for Children in Rheumatism.

M. Gillet (*Gazette des maladies infantiles; Revue médicale*, March 5th) gives the following formulæ:

R Sodium salicylate....7½ grains for each year of age
Syrup of orange flowers........ } of each from 1
Distilled lettuce (or other) water } [to 2 ounces, according to age
M.—To be given in teaspoonful doses every hour in a little milk.

When a mixture cannot be administered suppositories may be used:

℞ Sodium salicylate....7½ grains for each year of age
Cacao butter....from 60 to 120 grains, according to age
Wax................................q.s.
M.—Make into four suppositories to be introduced at equal intervals in the twenty-four hours.

Ointments may also be used by inunction around the joints, the whole being covered with cotton wool and waxed taffeta:

℞ Methyl salicylate................15 grains
Menthol..........................3 grains
Petrolatum....................450 grains
M.

Another formula for an ointment is the following:

℞ Salicylic acid (or sodium salicylate or methyl salicylate)............ } of each 150 grs.
Spirit of turpentine..... }
Lanoline................ }
Lard.........................2½ ounces
M. —*N. Y. Med. Jour.*

In variola salol abolishes all sense of irritation and desire to scratch.—*Ex.*

ABSTRACTS

THE USE OF WHITE OF EGG IN THE MODIFICATION OF MILK.

Dr. Jennie G. Drennan, of St. Thomas, Ont., Canada (*N. Y. Med. Jour.*, July 12, 1902) writes as follows:

The great difficulty in utilizing cow's milk as a means of nourishment for the human infant consists in the difference of composition of these two. By nature one is intended for the brute child, and the other for the human infant; and as the former requires to form muscle and bone more quickly and at the expense of brain and finer elements, and the latter vice versa, so their food must differ. The milk of the cow is richer in proteids, fats and salts, while that of the human mother is richer in sugar and water. In order to prepare from cow's milk a food similar to human milk, the ratio of its constituent parts must be changed and made to correspond to that of human milk.

The Following Table Shows the Composition of the Two Kinds of Milk:

	Cow's.	Human.
Water	858	890
Solids	142	110
	1,000	1,000

Solids.

	Cow's	Human.
Proteids—casein, serum-albumins	68	35
Fats and butter	38	25
Sugar	30	48
Salts	6	2
	142	110

The water must be increased from 858 parts per 1,000 to 890 parts; the solids decreased from 142 parts per 1,000 to 110 parts per 1,000. By the addition of water the former difficulty might be easily remedied, but the latter requires more consideration, for not only must the mass of solids be decreased, but these solids must be individually dealt with. Moreover, the mere addition of water would lessen to a too great extent the solids; therefore we must also add with the water some proteid matter. For example, if to a litre of milk which contains water 858 parts, solids 142 parts, we add a half liter of water, we change the ratio of solids from 142 in 1,000 parts to 94⅔ parts per 1,000, showing clearly that solids must be added as well as water. As human milk contains more serum-albumin than casein, as compared with cow's milk, it will be the serum albumin which it will be necessary to add to cow's milk. This can be obtained from vegetables, such as barley, etc., or from the white of the egg. I think the use of egg albumen preferable to the vegetable form, for in using the former we are adding an animal product to an animal product. The following formula, called the Dresden mixture, was prepared a few years ago by some German scientists. Carefully prepared, it will keep for months. All dishes and utensils, and the hands of the preparer should be scrupulously clean. The egg used should be rinsed in alcohol, broken, and the white dripped into a bowl with a spout; then 13 drachms of sterilized milk sugar should be slowly stirred in—*not beaten*, for it is advisable to have no air beaten into it; to this paste add slowly, stirring well, one pint and a half of sterilized water and strain through sterilized gauze into a pint of sterilized (not boiled) milk which has been cooled. The milk used should contain 9½ per cent. richness, and for this purpose the top of the good milk which has stood on the ice will give the desired amount of fat, or thin cream may be added to milk which has not stood long enough for the cream to rise. Boiling of the milk causes coagulation of the serum albumin and therefore is not to be allowed:

℞

Water	one pint and a half
Milk	9¼ per cent, one pint
Sugar	13 drachms
White of egg	one

As will be seen from a careful analysis, this formula does not exactly resemble human milk, but approximately does so.

It is better not to increase the salts of the milk by the addition of sodium chloride or calcium as they cause a precipitation of the casein.

This prepared milk should be poured into as many sterilized nursing bottles as are required to hold it. The food can be warmed by setting the bottle in a double boiler of water and warming to a blood heat.

REPORT OF AN EPIDEMIC OF CEREBROSPINAL MENINGITIS.

By Alan G. Murray (*Phila. Med. Jour.*, July 12, 1902). This report embraces five cases of meningitis which occurred between April 16 and May 9, 1900. This was the first time in the history of the locality that meningitis was present, though Frostburg and Lonaconing, Md., a few miles distant, had severe epidemics in 1893, and sporadic cases are present nearly all the time.

All of these patients were in excellent health up to the moment of the onset of the disease, and it set in suddenly with vomiting and headache in four of them. Case one did not have any vomiting. Four of the patient's had Kernig's sign, opisthotonos and herpes on their lips and noses. Case 3 was evidently an abortive case, as it began in the same way but ended on the fourth day in complete convalescence. In cases 1, 4 and 5, the pulse-rate was slow and the temperature very high. This was one of the most remarkable and interesting features of the disease and seemed to point to a fatal prognosis as all these patients died.

Case one had a typical acute nephritis; in cases 3 and 4 the urine was not examined, in cases 2 and 5 examination showed it to be normal. The blood was examined in cases 1 and 5 and showed a marked leukocytosis, which in case 3 was only noted once.

Lumbar puncture was not done, so the bacteriological cause of the disease can only be guessed at. Marked stiffness of the back of the neck was noted in all the patients; it was so great that they could be raised on their heels. The eyes responded properly to light in all, but were sluggish in cases 1 and 5; light and noise irritated the patients; constipation occurred in all the cases. There was no communication between the three families in which the cases of meningitis occurred, and the houses were several miles apart. Persons living next door and in constant contact with the sick were not affected, and the only cases that seemed to be directly infected were in the house in which the three girls had the disease, cases 3 and 4 taking it from case 2.

Cases 1 and 4 ran an acute course, then got better, then developed chronic cases and died with paralysis.

An urticarial eruption occurred in case 2 and case 4 had a curious mottling of the skin.

The treatment consisted of rest in a darkened room, quinine and cold sponging for the fever, and morphine and bromide for the pain and restlessness. In case 4 potassium iodide was given for some time and counterirritation of the spine, but they did not appear to have any effect. The cold sponging brought the temperature down for a few minutes, but had no lasting effect.

The only medicines that had any effect were the morphine and bromide.

THE PRESENT POSITION OF THE SURGICAL TREATMENT OF HIP DISEASE IN CHILDREN.

G. A. Wright (*The Practitioner*, July, 1902) says: No very radical change has taken place in the treatment of hip disease in the last few years. Rest, extension and fixation by one or other form of splint, of which the varieties are many, and none better, once the limb is in good position, than Thomas's. Intra-articular and periarticular injections of iodoform—a preventive more trusted on the continent than in this country—extirpation of "abscesses," or, in some cases, aspiration and injection of iodoform; excision where the disease is progressive in spite of treatment, and amputation when a useless limb and pelvic disease render recovery hopeless, constitute the main features of the present-day treatment.

Certain variations in the details of treatment are, as has been already said, employed in different countries, or by individual surgeons. Thus traction and immobilization are throughout the whole period of active disease obtained largely in America by a splint such as the Davis-Taylor long-traction apparatus. The importance of traction in the axis of deformity is insisted upon by some writers; another lays stress upon traction in the axis of the neck of the bone.

Immobilization without extension is largely used in this country unless there is marked malposition.

As regards operative treatment, excision by anterior incision is preferred by some surgeons; others have used the flap operation; others still employ the old posterior incision. Probably all are now agreed that excision, if performed, should be done before sinuses and therefore advanced mixed infection exist—late excision is worse than useless. After removal of the bone some surgeons keep up extension to separate the bony surfaces; others abduct the limb to keep the stump applied to the acetabulum.

THE ETIOLOGY OF INFANTILE PARALYSIS.

Alfred M. Gossage, M.B. (*Am. Jour. Med. Sciences*, May, 1902) says: From the evidence at our disposal it is impossible to come to any definite conclusion as to the exact nature of the disease. Clinical records are very strongly in favor of at least two, and probably three or four, definite diseases being included under the term anterior poliomyelitis, viz:

1. That class where the paralysis comes on suddenly without previous ill-health.
2. That class where the onset of the paralysis is preceded by general symptoms, such as fever, vomiting, pain in the back, etc.
3. The epidemic class.
4. The adult class.

The three latter may possibly be the same disease which may sometimes occur sporadically and at other times in the form of an epidemic. Occasionally cases may occur sporadically which are like the epidemic cases, the disease having spread to the nerve centers in the brain and to the peripheral nerves, and in some of these death even has ensued.

The arguments against regarding hemorrhage into the gray matter of the cord as the cause of any of the cases of infantile paralysis and the question of thrombosis are thoroughly discussed. In spite, therefore, of the fact that a purely vascular lesion would best explain these striking cases where the onset is absolutely sudden without other signs of ill-health, one is compelled to regard such a cause as improbable. Of the two other possible ways by which the cells in the ventral horns might be destroyed, viz., a local inflammation or a primary degeneration of the nerve cells, it is impossible at present to quite ignore the latter. An acute degeneration of the nerve cells might be brought about by some poison circulating in the blood, and such a poison may be formed by the growth of the microorganisms which are the causes of such diseases as scarlet fever or measels, or by the growth of a microörganism which is specific to infantile paralysis. Such a primary degeneration of the nerve cells is a possible cause for some cases of infantile paralysis, but the evidence in its favor is very inconclusive. The one definite fact obtainable from the post-mortem examination of patients that have suffered from the disease is that in all recent cases there are signs of a local inflammation in the ventral horns. That these appearances are inflammatory and not due to vascular occlusion is rendered the more probable by the fact that the inflammation sometimes involves other parts than the ventral horns. For instance, Schultze found inflammation of the meninges in an otherwise typical case and he considered from clinical evidence that the association of meningitis with anterior poliomyelitis was not uncommon. The inflammation as a rule, however, seems to be confined to the distribution of the anterior spinal artery, and doubtless in the majority of cases thrombosis occurs very early and so explains the sudden or very rapid loss of power. This local inflammation, like so many inflammations not due to direct injury, is probably caused by a local growth of some microörganism.

The reputed association with the acute specific fevers would be better explained by supposing that there is a weakened resistance to the attack of other organisms left after these complaints, and such a lessening of resistance would also explain the undoubted frequency with which exposure to chill, damp, or fatigue precedes an attack of acute anterior poliomyelitis in the adult. It is probable therefore that the organism associated with anterior poliomyelitis is specific to that disease and is not concerned in the causation of any other morbid condition. Since there seem to be two or more definite diseases included under the name of infantile palsy, there would probably be two or more specific organisms. Beyond this it is at present impossible to go.

SOME FRACTURES IN CHILDREN AND THEIR TREATMENT.

L. J. Hammond (*Penn. Med. Jour.*, June 16, 1902) says: That the most frequent seats of fractures in children are of the humerus, forearm, clavicle, thigh and leg, while fractures of the maxillæ, scapula, sternum and pelvis are so rare that time need not be consumed in considering them, nor is fracture of the rib frequently met with in children except in cases of violent crush.

True epiphyseal separation, and by this is meant a distinct separation of the epiphyseal cartilage from the osseous end of the diaphysis, occurs only in infants and is extremely rare, while osteo-epiphyseal separation is, according to Beck and Scudder, frequently observed between the ages of 14 and 17. Here the fracture is not limited to the cartilage, but passes into the diaphysis, and when of traumatic origin is most frequently found at the upper and lower ends of the humerus, the lower end of the radius, the upper and lower ends of the femur and the upper end of the tibia.

This form of fracture, or rather separation with fracture, cannot occur after the period of ossification, which, according to Quain, occurs in the humerus from the second to the fourteenth year; in the radius during the same period, while in the femur from the ninth month to the first year.

The age, however, at which ossification takes place varies somewhat and depends also upon constitutional conditions; for example, in dwarfs and rickitic subjects the cartilaginous condition may continue up until the fortieth year. The tendency of epiphyseal separations is to produce premature ossification of the limb which may stunt growth.

In rickets the great brittleness of the osseous tissue makes fractures possible as the result of the smallest degree of violence, so does fragility in scurvy, infantile palsy of long standing; and Beck considers tuberculosis, especially of the knee, predisposing to fragility of the femur.

Causes.—The causes of fractures in children may be due,as in adults, to direct and indirect violence, as well as to muscular contraction, the latter cause, however, is seldom a factor.

Incomplete fractures are observed in children as a result of bending and partial separation, causing a so-called green-stick fracture which is due to the yielding of the convex cortical portion of the bone, while the concave stratum, which is more flexible, is but bent. This infraction, as it is called, is frequently found in rachitic children in the tibia, fibula and femur.

As to the regions most frequently the seat of fracture:

Forearm about 18 per cent. Of this number, 20 per cent. occur at the lower end of the radius.

Humerus about 20 per cent. Of this number, 20 per cent. are either condyloid, supracondyloid or epicondyloid.

Clavicle, about 15 per cent. Of this number about 40 per cent. occur at or beyond the outer third.

The femur, in his experience, is much less frequently involved than any of the long bones of the upper extremities. This view is at variance with some statistics, and is caused in all probability by the fact that most of the cases that have come under his observation have been in dispensary work, consequently such fractures as those of the lower extremities requiring bed treatment have been fewer.

THE MILK SUPPLY AND INFANT-FEEDING.

With the coming of the summer the milk problem looms up afresh with all its Gordian knots which the sanitarian has of late made a determined effort to untie. Heretofore the fitness of milk for consumption was judged only from the amount of fat and the presence of preservatives. (The problem has been largely a commercial one). Now, thanks mainly to the efforts of Park, of the New York Municipal Laboratory, we are beginning to appreciate the importance of a sanitary standard for the wholesomeness of milk. Milk watered with pure water is a fraud which affects mainly the purse, but milk containing millions of bacteria per cc. is a menace to public health. Park has showed that the New Yorkers are consuming milk averaging in many cnses close to 6,000,000 bacteria per cc. Even in midwinter he found in some samples of milk furnished to the tenements from 1,000,000 to 10,500,000 bacteria per cc., while in September the number of bacteria ranges from 5,000,000 to over 21,000,000. We have no reason to think that these conditions are peculiar to New York and do not prevail in other large cities. It is self-evident that such high bacterial content renders the milk unfit for human consumption, especially for feeding infants. Aside from the possibility of pathogenic germs, the saprophytes are by no means indifferent living substances. Many of them, like the bacillus mesentericus vulgatus and various anærobes, cause peptonization of the milk-proteids and elaborate dangerous toxins which are the frequent cause of severe gastrointestinal irritation.

It would appear at first sight that the problem could be effectually solved by sterilization of the milk. Unfortunately, however, the solution is not so simple. Sterilization of from one-half to one hour, as is usually practised, does not kill the spores of the peptonizing bacteria, and what is of greater importance, renders the milk unfit from a dietetic standpoint for infant-feeding. Sterilized milk differs materially from fresh milk both in chemical composition and digestibility. Under the influence of boiling nearly all the constituents of milk are more or less changed. There is a loss of proteids and a change in the character of the fat, rendering it less digestible. Lactalbumin is coagulated even before the milk reaches the boiling point (72° C.); the organic combinations of phosphorus are changed into phosphates which are assimilated with difficulty; lecithin is destroyed; the calcium salts are changed into insoluble phosphates and the milk-sugar partially destroyed (Davis and Leeds). Altogether, the changes are of so serious a nature as to render sterilization of milk for infant-feeding a questionable procedure. In view of this fact, pasteurization of the milk has been suggested and is being gradually introduced as the best method of preparing milk. Pasteurization at a temperature of 60° C. does not change the milk in the least and destroys all the vegetative bacteria, including the pathogenic varieties. But even pasteurization possesses serious imperfections. In the first place, the spore-forming peptonizing bacteria are not affected, the poisonous products of their metabolism are but partially destroyed, and, if the milk is kept in a warm place after pasteurization, both the bacteria and their products multiply to an enormous extent (Park). In the second place, great care in the method of pasteurization is necessary to destroy the tubercle bacillus. It has been shown by Theobald Smith and Russell that unless the vessel is kept closed so that no scalded "skin" forms on the surface, the tubercle bacillus is not destroyed by the temperatures at which pasteurization is effected. Finally, we are still lacking a convenient and cheap pasteurizer for domestic use.

The entire milk problem resolves itself, primarily, into the question of a sanitary milk supply. The public should be educated to the demand for a milk containing a minimum number of bacteria. Such a milk, when pasteurized and rapidly cooled would make an ideal substitute for mother's milk.—Special article in *Phila. Med. Jour.*

ONE WAY TO FIGHT CONTAGION.

Charles V. Chapin makes the following suggestions for the teaching of cleanliness among school children in his article on "One Way to Fight Contagion:"

1. Not to spit, it is rarely necessary—to spit on a slate, floor, or sidewalk is an abomination.
2. Not to put the fingers into the mouth.
3. Not to pick the nose.
4. Not to wet the finger with saliva in turning the leaves of a book.
5. Not to put pencils in the mouth or moisten them with the lips.
6. Not to put money into the mouth.
7. Not to put pins into the mouth.
8. Not to put anything in the mouth except food and drink.
9. Not to swap apple cores, candy, chewing-gum half-eaten, whistles, or bean blowers, or anything that is habitually put into the mouth.
10. —Teach the children to wash the hands and face often; see that they keep them clean. If a child is coming down with a communicable disease it is reasonable to believe that there is less chance of infecting persons and things if the hands and face are washed clean and are not daubed with secretions of the nose and mouth.
11. Teach the children to turn the face aside when coughing and sneezing, if they are facing another person.
12. Children should be taught that their bodies are their own private possessions, that personal cleanliness is a duty, that the mouth is for eating and speaking and should not be used as a pocket, and the lips should not take the place of fingers.—*Phila. Med. Jour.*

A STUDY OF SUICIDE

Is made from the records of his company by Dr. Hanscom, of the Royal Arcanum, which brings out a phase of the question little known. In a total death loss of 2,375 in 1901 there were 81 members who committed suicide. The continued losses from this cause incited the company to enact a law that no claim of the estate of a suicide would be paid unless the membership had existed at least five years. By an accurate comparison it was found that this restriction reduced the number of suicides to one-half or one-third what it was when the claims of suicides were paid the same as those of others. It is a strange datum of human nature, this demonstration that a certain number of men thinking of suicide will insure their life prior to doing so. It has been said that married men are less prone than others to commit suicide, but Dr. Hanscom's figures show that 67 married men 7 widowers and 7 single men committed suicide in 1901. The report is mildly cynical as to the too common verdict of the coroner, "while temporarily insane." "Such verdicts may be excusable in the coroner, as an official who is called upon to perform the duties of both the physician and lawyer cannot be expected to perform either with skill or satisfaction to disinterested parties." In five years the suicidal means employed were by firearms, 182; by poison, 88; by hanging, 43; by asphyxiation, 35; by cutting, 21; by drowning, 15; by jumping from train or window, 4. It is a pathetic fact that of the 81 cases, 23 of the men were at the time of death out of employment and 25 had been in previous ill-health.—*American Medicine.*

SPINA BIFIDA. OPERATIVE TREATMENT AMONG OUTPATIENTS.

James H. Nicoll (*Brit. Med. Jour.*, June 21, 1902) says: With reference to treatment, cases of spina bifida may be broadly classified as follows:

1. Cases with badly ulcerating or leaking sacs. These as a rule die from septic meningitis, whether subjected to treatment or not.

2. Cases in which the sac is so extensive and so sessile as to render it impsosible to obtain flaps sufficiently free to effectually close the large gap. Such cases may be treated by the following methods: (*a*) Injection of Morton's fluid or other irritant, the syringe cannula being inserted through sound skin at least 1 inch clear of the margin of the tumor, and pushed through the muscles and fascia into the sac, thus avoiding subsequent leakage and permitting of the case being treated as an out-patient; (*b*) introduction of a strip of iodoform or other packing by the same route the end of the strip being fixed by suture in the muscles and the skin closed by suture over it and reopened after a week for its withdrawal; (3) introduction of a needle for the purpose of tearing and roughening the sac. This method has a limited application in practice.

3. Cases in which the sac contains nerves or spinal cord, but is sufficiently pedunculated to permit of excision. Flaps of skin and flaps of mesoblastic tissues (muscle and fascia—the inclusion of bone is quite unnecessary) are fashioned and raised and the sac is opened. Should the spinal cord be present, all free sac is cut away, and the remainder sutured over the exposed cord and covered in by the flaps of fascia and skin. Where the filum terminale of the cord is present it may sometimes be freed and removed with the sac.

In cases where the sac contains nerves, the methods he has followed have been mainly two: (1) In certain cases it is possible to dissect the nerve cords off the sac, place them in the spinal canal and cover all with the fascial and skin flaps. (2) Where the nerve strands are numerous this is impossible, and the following plan has proved useful: Raise skin flaps and fascial flaps as usual, open the sac and explore the interior; excise any portion free from nerve tissue, cut the remainder into ribbons by incisions made from the interior, avoiding the nerve tissue; gently but thoroughly roughen the entire interior—including the surface of the nerve bands—with the point of the knife. This has proved efficient in cases where no part of the sac could be either excised or cut into ribbons. Place the emptied and roughened or cut-up sac into the patent spinal canal and cover in with the fascial and skin flaps.

The following modification of this method has also proved useful: Pack the "slashed" and roughened sac with iodoform or other sterile gauze, and partially suture. At the end of two or three days remove the packing and complete the operation in the usual way.

The local result of such operation, is necessarily less satisfactory than that obtained in cases where the conditions permit of a complete excision of the sac. The mortality also is somewhat higher. In two cases paralysis—of a lower limb in one and of bladder and rectum in the other—has resulted in his hands. On the other hand, the operation has in several resulted in the relief of pre-existing paralysis.

4. Cases of pure meningocele. The sac is simply opened, explored and cut away. Its neck is closed by ligature or suture, the method depending on the size of the aperture, and covered in by the fascial and skin flaps. Excision in such cases constitutes an easily accomplished radical cure.

In the treatment of hydrocephalus he has employed several methods. They are briefly the following:

a. Drainage of cerebrospinal fluid at the time of operating for spina bifida. Into the vexed question of the route or routes by which hydrocephalic fluid reaches the sac of a spina bifida it is not necessary to enter here. It is sufficient to restate the fact that in certain cases of spina bifida with hydrocephalus it is possible, by raising the child's head and shoulders after the spinal sac has been opened, to drain away as much fluid as may be deemed safe, the amount being judged by the tension of the fontanelle.

b. Continuous drainage by a tube inserted into the spinal canal through the neck of an excised spina bifida sac at time of operation.

c. The establishing of a drainage channel from the spinal canal (at the site of, and during the operation for, spina bifida) into either the peritoneal cavity or the cellular subcutaneous tissue, or both. This may be done by a drain, which is absorbable after a time, or by a drain which is removed by secondary operation after a period of weeks or months.

d. Drainage of the cerebral ventricles, either externally or into the meninges.

e. Application of various solutions (chiefly iodine) to the interior of the cerebral ventricles. What experience he has had with this method has impressed him favorably. It is not, however, devoid of risk. The amount and the strength of an injection will depend on the degree of dilution likely to occur internally, that is, on what the operator knows, from previous drainage or otherwise, of the amount of fluid present. In any case, for a first injection something less potent than Morton's fluid should be employed.

A COMMON SENSE ATTACK ON THE ABUSES OF HOSPITAL PRACTICE.

Dr. George R. Fowler, of Brooklyn, deserves the thanks of both the profession and the public for his resourceful public spirit displayed in a novel, but at the same time obvious method of meeting the imposition practised upon the hospital system by unscrupulous persons. On May 21st Dr. Fowler brought suit against eight patients on whom he had operated in various hospitals to which he was attached, for recovery of fees on account of his professional services, the patients being all of fair financial position and able to pay. Dr. Fowler's action was a matter of principle, and will undoubtedly cost him in time and money as much as he gains, so that it lays the profession under an obligation to him. If this example is followed by other physicians it will undoubtedly do more to check the growing imposition on hospitals than any plan yet suggested, for which fact the charitably disposed who support these hospitals with their means will owe their gratitude, while even in the abstract the community must thank him for something effected toward stemming the tide of voluntary pauperization. Two of the cases were settled before they came up, and one half an hour later. In all the others either an adjournment was taken or judgment given for the plaintiff.—*N. Y. Med. Jour.*

SORE THROAT DUE TO THE BACTERIUM OF SPUTUM SEPTICEMIA.

Dr. WM. G. BISSELL (*Med. News*, May 31, 1902) makes the following observation upon this form of sore throat:

An important class of diseases to be considered is those inflammations of the tonsil produced by the micrococcus of sputum septicemia. Dr. Carlton R. Jewett submitted a culture from the throat of Miss B. The patient was extremely ill, suffering from a condition considered by the attending physician and others to be tonsillar Klebs-Loeffler infection. Examination of the culture did not reveal the presence of Klebs-Loeffler bacillus. Reluctant to believe the condition to be other than diphtheria, Dr. Jewett requested the bacteriologist to visit the case in person. On the following day, under the direction of Dr. Jewett, he made several cultural inoculations and also succeeded in obtaining a small portion of the membranous exudate, which at this time, covered the greater portion of both tonsils and portions of the uvula and nasopharynx. Examination of the cultures resulted as in the former instance. Examination of the membrane revealed the micrococcus of sputum septicemia in abundance.

The patient died about the tenth day of the disease. Drs. C. G. Stockton, H. R. Hopkins and Roswell Park had been called in consultation and were unanimous in the statement that as regards the macroscopic appearance of the tonsils and the clinical symptoms, the illness could not be distinguished from a case of severe diphtheria. Diphtheritic antitoxin of a reliable make had been administered at the onset of the disease without the slightest improvement. There is no question that this patient died from a toxemia due to the micrococcus of sputum septicemia, the primary lesions being confined to the tonsils, uvula and nasopharynx.

The principal treatment of sputum septicemic infections is the same as that occasioned by the streptococcus pyogenes,except that no antitoxic substance has as yet been discovered. As regards quarantine, the organism is the common inhabitant of the human mouth, and but rarely infects.

BENIGN HEMORRHAGIC SCARLATINA.

When hemorrhages of various kinds occur in the course of scarlatina, the case is usually recognized as one of malignant type. Bouyer (*Archives de Médecine des Enfants*, January, 1902) reports a case of scarlet fever accompanied by considerable hematuria, petechiæ upon the trunk and lips, and severe epistaxis, in a child four and a half years of age. The hemorrhages decreased and finally disappeared, and at the end of three weeks the cure was complete. In view of the universally fatal character of cases of hemorrhagic scarlatina the author surmises that probably the hemorrhages occurring in this case are to be attributed not only to the scarlet fever, but also to a hemophilic tendency, shown also during an attack of measles when the same child was three years old by severe epistaxis.—*Med. News*, May 31, '02.

HEPATIC LESIONS IN INFANCY.

Martha Wollstein (*Am. Jour. Med. Sciences*, May, 1902) says that from a study of 370 consecutive autopsies, made chiefly at the Babies' Hospital, with a few from the Infants' Hospital, on Randall's Island, offers some interesting facts. The ages of the cases studied ranged from two days to four years, but the majority (193) were under six months old; 287 were less than one year of age, and only 31 were over eighteen months. The lesion most frequently encountered was fatty infiltration, which was apparent on gross examination in 214 cases, or 58 per cent., including 45 cases which were tuberculous as well as fatty. Of the remainder, 22 showed tubercles without fatty change, 2 were cirrhotic, 85 deeply congested and only 47 were normal to the naked eye.

The condition of the infants was noted at the autopsy table as follows: 80, or 22 per cent., were well nourished; 93, or 25 per cent., were fairly nourished, and 197, or 53 per cent., were emaciated.

SUBCUTANEOUS GELATIN INJECTIONS IN MELENA MEONATORUM.

Holtschmidt (*Munch. med. Woch.*, 1902, vol, xlix, p. 12) reports five cases of melena neonatorum, occurring in the gynecological clinic at Dresden during the year 1901, in which subcutaneous injections of a 2 per cent. solution of gelatin were used. During the seven years from 1894 to 1900, 7 of the 14 cases of melena occurring in this clinic resulted fatally. All of the 5 cases occurring in 1901 recovered. As a rule 15 c.c. of gelatin solution was used, and in two instances only was this repeated. While four of the cases positively recovered, one child left the hospital on the ninth day in a very serious condition, although there had been no hemorrhage for five days.—*Med. Rev. of Revs.*

PEDIATRICS

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EDITORIAL COMMENTS

Muscular Rheumatism and Appendicitis

Dr. Eugene C. Underwood (*New England Medical Monthly*, July, 1902) calls timely attention to the frequency with which appendicitis is counfounded with muscular rheumatism (rheumatic myositis) of the muscles and fasciæ overlying the right iliac fossa. One case he describes in which the patient, a neurotic adult female, was convinced in her own mind that she had appendicitis. Along with the pain, which was quite characteristically localized, there was fever (101° F.) and constipation. The presence of myalgia elsewhere in the body, however, and the history of "stiff neck," etc., at previous times suggested the right diagnosis. On an anti-rheumatic treatment the patient recovered promptly.

It is a pity that some physicians seem constitutionally opposed to this view. The same doctors are constantly diagnosing all pleurodynia as a "touch of pleurisy," and all lumbago as disease of the kidneys. We know of one worthy medical ancient who scorned a urinary examination as a test of nephritis, and gave all his patients with backache an infusion of buchu as a routine measure. It would be hard to say how many cases of renal irritation he actually superinduced in this way!

We venture to intimate that a collective investigation of all cases of normal appendix removed for supposed appendicitis on the ground of tenderness in the right iliac fossa would make a *chronique scandaleuse* quite sensational in its extent. B.

Cardiac Thrombosis in Diphtheria

MM. Deguy and Weil communicated to the Pediatric Society of Paris in May (*Progrès Médical*) an observation upon cardiac thrombosis in diphtheria which seems worthy of unusual notice. The case in question they stated to be related to six similar cases reported by them recently in the *Archives de Médicine Experimentale.* A little girl was admitted to the hospital with a severe diphtheritic croup. An injection of antitoxin (a "very large dose,"—quantity not mentioned) was made. Six days later the case had not improved, membranes still persisting. They therefore gave a second dose, but the general condition remained bad, — red throat, exhaustion, albuminuria,—and on the fourteenth day after entrance, with extreme weakness, vomiting and rise of the temperature, the child died. At the autopsy the heart was found to be dilated, with adherent clots at the apex of the ventricle where "apical endocarditis" was readily made out. Epithelial nephritis was also present, with infarctions of the spleen. In the cardiac thrombus, as well as in the endocardium itself, the observers named found a small diplococcus, the same which they had found in the six other cases previously reported, and which they name *diplococcus perlucidus.* This germ, which they had also isolated from the blood *intra vitam*, appears to them to play a very serious part in the development of certain cases of diphtheria. It determines a peculiar *metadiphtherial* septicemia of which, in this special case, the cardiac thrombosis described was one of the sequences. In these cases they find that antitoxin "even in large doses" is powerless to arrest a fatal result; the children recover from their diphtheria but soon succumb to this specific septicemia, of which the *diplococcus perlucidus* is apparently the cause.

Seven cases of course make too small a number to warrant sweeping generalizations, but it would be well if those physicians who have much to do with diphtheria would keep their eyes open to this possibility and make some satisfactory bacteriological tests. B.

For Sick Hebrew Children.

Contracts have been let for the construction of a large pavilion in the grounds of the Sanatarium for Hebrew Children at Rockaway Park. The pavilion will accommodate 600 mothers and children.—*Jour. A.M.A.*

When patients are in good condition it is best to give them no food before operating under ether. If, however, they are quite weak, it is often advisable to give them a cup of clear broth three hours before the operation, and, in some cases, a little whiskey one hour before.—*Inter. Jour. of Surg.*

The trustees of Rush Medical College have adopted the recommendation made by the faculty of the college, that women be admitted as students on the same terms with men. Women will now be admitted to the senior and junior courses in this time-honored institution.—*Woman's Med. Jonr.*

ORIGINAL ARTICLES

HYDROCEPHALUS, ITS ETIOLOGY AND A CURATIVE OPERATION BASED ON SAME.*

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THE word hydrocephalus is intended to be restricted in this article entirely to the variety most often observed and known as hydrocephalus internus. It is a chronic process usually but one that can and often does take on a sudden and very acute form. It is nearly always congenital, although it occurs with more frequency as a sequel of meningitis, syphilis and other diseases affecting the membranes of the brain in adult life than is commonly thought to be the case by those who have devoted little study to the subject; I do not embrace such cases in this article for obvious reasons.

Hydrocephalus internus is an over-accumulation of fluid within the ventricles, a pathological distention from too much fluid confined in those spaces and due not to over-production, but to the want of a means of escape. All serous structures secrete their own kind of fluid and it naturally follows that secretion must escape when it reaches the physiological bounds by some means or avenue or else such structures as the ventricles will become filled and over-distended with their own secretion.

Leonard Hill has demonstrated the fact by experiment that there exists a direct connection between the pressure of the cerebral fluid and the absorption by the veins in the cerebral membranes. He has proved that the tension of the cerebral fluid and that of the veins in the membranes are the same, consequently there is a ratio of equalization by which the cerebral structure is protected from the evils of undue pressure; but this can only occur when the excess of fluid producing this abnormal tension has access to the membranes in which are the veins. There may be a number of pathological lesions which would, and do occasionally, cause hydrocephalus by closing the foramen of Magendie and the apertures of Mierjejewski, but they are in advanced childhood and adult life always a result of a previous and very often recognizable disease.

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* Read before the Medical Association of the State of Alabama.

I propose to discuss the hydrocephalus of infancy, sometimes occurring before birth, most often congenital and manifesting itself early. All of these cases present characteristic symptoms in the first year or two or three years of life.

Bruce and Stiles in March, 1898, reported that in practically all cases of hydrocephalus Magendie's foramen and all channels through which the cerebral fluid in the ventricles reached the subarachnoid and subdural spaces were closed. Watson--Cheyne and Sutherland have ascertained the same fact in their post-mortem investigations. They have also discovered that the foramen of Monro might be occluded. At the same time they were unable to find any diseased condition of the membranes themselves in most of the cases, and also there was an absence of the normal amount of subdural and subarachnoid fluid although the ventricles were enormously distended. Therefore they concluded to put in practice the theory of Leonard Hill combined with their own post-mortem discoveries by operating on an infant with a tremendously enlarged head for the purpose of producing an opening between the lateral ventricles and the subdural and subarachnoid spaces, which artificial canal was expected to replace the normal foramen that was closed from some disease or some defective process.

Their first case was six months old and they operated as follows: A curved incision was made over the left lower angle of the anterior fontanelle 2½ inches in length, embracing the skin and other tissue down to the dura mater. This flap was turned down and a small incision ¼ inch long was made in the dura. No subdural fluid was present. A number of fine catgut strands about 2½ inches long were grasped by one end with a pair of smooth small forceps and pushed about 1 inch backward and slightly downward between the dura and the arachnoid, then held with a small pair of forceps to prevent the withdrawal of the ends between the membranes. The other end was caught by a similar smooth forceps and pushed through the cortex of the brain into the lateral ventricle, when a clear fluid escaped in large quantities. The dura was sutured and the flap stitched back in apposition. Dressings were applied, and the wound healed in six days. There was marked overlapping of the cranial bones due to the escape of a large accumulation of fluid in the ventricles at the time of operation and the rapid absorption of the remaining excess of fluid. This fluid must have been absorbed, as Leonard Hill says, because the wound healed in six days and there could have been no other means of escape. This child did not improve otherwise than from those symptoms of extreme pressure, and died three months later from basilar meningitis; but there was noticed an asymmetry of the head, the left side being smaller.

They operated on a second case with the same result as to the decrease of fluid. The asymmetrical condition was noticed and they did a similar operation on the right side two months later and found the right lateral ventricle greatly distended which showed that it was necessary to drain both ventricles. The child was cured of hydrocephalus, but its mind remained hopelessly impaired.

I was impressed with the results of these operations and was convinced of the correct and logical basis that prompted them. I determined to do this operation when I was called to see an infant in July, 1899, which was 2 months of age, and was born prematurely, being a seven months child. It had been artificially nourished, and was suffering from gastrointestinal disorders of rather severe type. The parents had noticed no symptoms whatever which indicated any trouble of a hydrocephalic character until one month prior to the date of my visit, yet so rapidly had the hydrocephalus progressed that when I saw it the head was enormously distended, measuring 21 inches, the bones being widely separated and the pressure so great that the eyes protruded noticeably and the baby was totally blind. There was high fever and intense restlessness. The child's condition was extremely critical. I made one curved incision connecting the points of the lower external angles and the frontal fontanelle instead of making two separate incisions, and turning this single flap down just far enough to give room for the other steps of the operation I made an incision nearly ½ inch through the dura mater on one side at a time, introduced three or four strands of No. O catgut beneath the dura about 1 inch and then pushed the other ends of the ligatures through the cortex into the lateral ventricles.

There was no fluid in the membranous spaces, but when the the ligatures penetrated the ventricles, the fluid gushed up like an artesian well. I closed the membrane and sutured the flap in position and applied a copious gauze dressing and bandages, but the fluid continued to escape for three or four days. In a few hours the bones met, and the child regained its sight as soon as consciousness returned from the effects of the anesthetic and the pressure symptoms were relieved. This improvement continued for six or eight weeks, at which time it was noticed that there was a gradual enlargement of the head, which progressively increased until November 20th following, when I was called to Pensacola, Florida, the home of the child, and performed a second operation. The child's condition was fully as critical as at the first operation, except there was no fever. I could account for the reaccumution after a continued relief of such a length of time only from a failure to establish a permanent opening between the ventricles and the subdural spaces, a result due to too rapid absorption of the very small ligatures which I used in the first operation. I therefore decided to use five strands of No. 2 catgut.

I modified the scalp incisions because I saw no reason for such a large flap. I made a straight incision, 1 inch long, over each lower external angle of the frontal fontanelle down to the dura, incised that ⅓ inch and inserted the ligatures of No. 2 catgut, just as was done in the first operation. Again, there was an entire absence of fluid in the subdural spaces, but the fluid welled up as freely as before when the forceps penetrated the lateral ventricles. The dura was sutured and the scalp incision snugly closed, dressed with gauze and antiseptic collodion; there was no escape of fluid through the closed incisions; sight was restored as before, when the patient had recovered from the effects of chloroform, and the head has not again enlarged from over-accumulation of fluid. The bones are still separated along the sutures, and the fontanelles are unclosed, but there is positively no undue distension and no tension beneath the sutures or fontanelles, and I am very sure the head will never indicate in a few years any evidence of its former abnormality. The child was nourished after the last operation by a wet-nurse, it being greatly improved in its digestion and assimilation. Its health now is perfect; its mind as bright and good as any child of its age; its body plump and well developed, although the muscles of the lower extremities are somewhat below par from non-use, though there is decided improvement in this respect which promises perfect results. In every other way the child exhibits evidences of perfect health and unquestionably will rapidly become as fine a specimen of childhood as other children less fearfully afflicted.

I desire to call attention especially to the fact that there is no interference with pulse, respiration, or any other function while performing this operation; but within the first 24 hours following there was an increased temperature and rather an intense nervousness, evidently due to the circulatory changes in the brain from the sudden relief of the great pressure. This soon subsided, however, and was never alarming. It was nicely controlled by combined doses of bromide of potash and chloral. There is only one special danger to be apprehended —septic infection, and it is entirely unnecessary to say this must be prevented.

There is no other surgical procedure that has ever accomplished enough in these cases to justify its performance or win its place in recognized surgery. Nor has any other method been based upon anything save empiricism. While it is probable that hydrocephalus is secondary to other primary pathological processes which are in the nature of exciting causes of such a resulting condition, still the important fact is true that all the serious physical disturbances and the gravity of the disease are produced entirely from the pressure upon the cerebral structures. This operation produces no alarming disturbance; it is free from danger in proper hands and corrects an abnormal condition, thereby removing the cause of the disease necessitating the operation and effecting a cure.

Inasmuch as simple tapping or the mere draining of the ventricles and the later procedure of lumbar puncture, have all been tried and found wanting, and are even positively dangerous in some cases, there is unquestionably a hope and possibly a brilliant and very useful future for this operation. I do not wish to be understood as lauding this operation as a certain cure in all cases of this kind, nor do I believe that it as yet possible to safely estimate its entire extent of usefulness and the definite indications for its performance; but while it has effected a cure in only one case, it is true, this fact demonstrates the possibility of cures in many others, and why not all similar cases? This operation is scientific, evolved from careful and correct researches and has for its justification a sound, physiological basis, proved by actual demonstration. Its proper place as a recognized operation of merit will be determined by the results of its promise and reasonable expectations in the hands of the surgeons who test it and receive the rewards of its success. But to gain the full benefit and best results from this method it is essential to perform the operation as early as possible, for the chances of restoring the mind decrease with each week of delay in removing the pressure npon the cerebral structures.

P.S.—The child has now well developed lower extremities and walks and runs about as other children.

Free Dispensaries.

At a meeting of the Alumni Association of the College of Physicians and Surgeons, of Chicago, held May 19, resolutions were passed condemning the establishment of free dispensaries throughout the city, by the faculty of the college, alleging that the free dispensaries encouraged pauperism and were in direct opposition to the graduates of the college who, upon locating in different parts of the city, found themselves surrounded by these free institutions. The secretary of the faculty, who with other representatives was present, in answer to the charge said that the dispensaries were established equally for the instruction of the students of the college as well as for the benefit of the poor.—*Amer. Med.*

Miss Olive E. D. Hart (teacher) of Manhattan recently read a paper on "The Correction of Speech Defects," before the Brooklyn Society for Neurology, which was discussed by Drs. Cox, Brush, Reynolds and Alderton.—*Woman's Medical Journal.*

A REPORT OF SIX CASES OF SURGICAL ERYSIPELAS TREATED WITH THE ANTISTREPTOCOCCIC SERUM, WITHOUT BENEFIT.

By Edwin Rosenthal, M.D.,
Philadelphia, Pa.

WHEN Marmorek announced his discovery of the antistreptococcic serum in February, 1895, he reported 45 cases of veritable erysipelas, as being choked at once, and cured by his serum. Following the experiments of Marmorek and others, I have had occasion to use this serum not only in erysipelas but also in puerperal fever, scarlet fever, catarrhal pneumonia, and also various conditions of infant life the cause of which I believed to be a "strepto-infection."

My results have been variable, but in puerperal fever the results have been so favorable as to prompt me to record my experiences. Also in streptococcic conditions of infancy and young childhood I have had occasion to use the serum and I have been firmly convinced that the favorable results obtained were specifically due to its use.

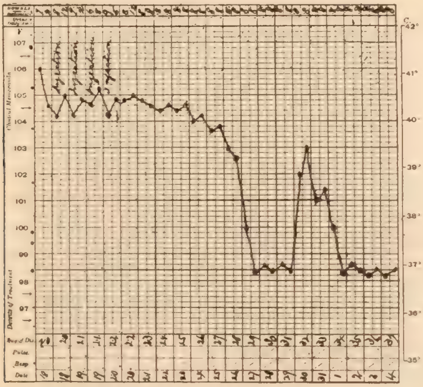
However, my tests were not numerous nor were they of a character that could convince; I therefore felt that the question of the specific value of the antistreptococcic serum was a debatable one, and for the purpose of proof I felt that if an occasion should occur, such as an epidemic of puerperal fever or erysipelas, wherein the origin of the infection was known, and in which opportunity was mine to see the cases from their inception I would use this occasion to test this serum, not only as a remedial agent but also as an immunizing agent.

I was fortunate enough, however, to meet with an epidemic the origin of which was certainly due to the streptococcus and the history of this epidemic tallying with the bacteriological examinations was conclusive to my mind that I had the material to clinically test the specific virtues of this serum.

The epidemic was one of "surgical" erysipelas. Its remote origin is unknown to me, but the "carrier" of this infection from the one case to the other is too personal for me to dwell upon. Suffice to say I was called upon to treat an epidemic of surgical erysipelas in my practice the earliest days of this year, and the presence of such a condition in one's practice is one of the regrettable instances that gives much food for reflection.

To briefly summarize my cases, I give them as follows and in the order that the infection occurred:

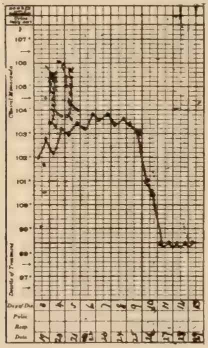
Case 1.—A. H., at the age of puberty, suffered from pimples and comedo; he constantly picked at his face, and, as a result of pinching one of his pimples, an abscess was caused; it was opened and treated on general principles. About twenty days after his first visit he called at my office; the abscess had never healed. At this visit (January 18th) I incised the abscess and applied an iodoform gauze compress and bandage; the next morning I was sent for; he suffered intensely from headache, also from sore throat and had a violent chill; his temperature was 106° F.; the forehead (the site of the abscess) was swollen and red; the swelling was continuous down on either side of the malar region, and the eyelids were slightly puffy; I examined the urine and found it normal.—I had no idea that I was dealing with a case of erysipelas and gave to this patient calomel in divided doses. The diagnosis was an ulcerative tonsillitis. In the evening of the same day this patient was worse, though the fever had declined somewhat. I



Case No. 1. Diagnosis—Abscess on forehead. Revise—Erysipelas. Name, A. H. Age, 14 years. Nativity, American. Diet, milk, beef-tea. Treatment: Four injections of the Antistreptoccocus Serum 10 c. cm. each. Tinct. Ferri Chlorid. Quinia gr. iv 4 times a day. Whiskey, half ounce every 2 hours. Strychina 1-60 t.i.d. Ichthyol 33 per cent. Lanolin. Oil Gaultheria. Result, recovery.

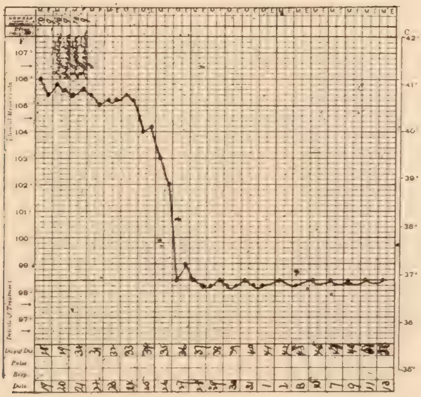
placed over the site of the abscess a sublimate dressing, previously washing out the abscess. The next morning I found both eyes closed, the parotids on both sides swollen and the patient's condition no better. It was then unmistakably a case of erysipelas, and the high fever and other symptoms prompted me to at once use more specific methods. For this purpose I injected the antistreptococcic serum in 15 c.cm. doses. My first injection was on the morning of the second day, my second in the evening; my third the morning of the third day; the fourth injection in the evening. After the fourth injection I expected the fever to decline, but the next morning, seeing no result, and finding the fever just as high and perhaps a little higher, I dropped the serum treatment; began the iron and quinine treatment with ichthyol ointment externally; stimulants, etc., and the case slowly pursued a normal course; clearly the serum had no influence. A most positive evidence of the utter futility of the serum was evidenced in this case, for on the twelfth day since the beginning of the erysipelas there was a recurrence lasting three days.

Case 2.—George C., aged 12 years, met with a contusion of his right eye. The mother feared the discoloration and hence desired that I do something; this was in the nature of a couple of leeches; these being brought I applied them. The following morning this patient suffered from sore throat, headache, chills, etc., and his face (the site of the leech bite) showed evidence of inflammation. This case received as soon as practicable 10 c.cm. of the serum and a repetition in 24 hours; there was no response, however; the disease progressed and after 72 hours recourse was had to the old method of iron, quinine, whiskey, etc., and this patient recovered.



CASE NO. 2. DIAGNOSIS—Contusion of right eye. REVISE—Erysipelas. Name, George C. Age, 12 years. Nativity, Philadelphia. Diet, milk, beeftea. Treatment: Two injections, 10 c. cm. each, Antistreptococcus Serum. Quinia Sulph. gr. viii t.i.d. Tinct. Ferri Chlorid. Whiskey. Icthyol and Lanolin 33 per cent. Ol Gaultheria. Recovery.

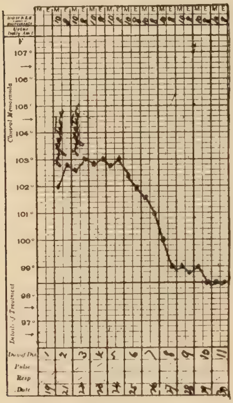
Case 3.—Walter S., an adult, who suffered from an incised wound on the right shoulder blade; this wound was 3 inches deep and was treated with iodoform gauze, etc. This injury was of such a nature that its repair took quite a while, and on the twentieth day the wound was still about an inch deep. On the same day that patient No. 1 was in my office receiving treatment this patient came to have his wound treated. On his return to his home he felt the parts stiff and stinging (to use his words). After a sleepless night for the patient, I was called the next morning, and found him delirious; a temperature per os of 106° F., with violent headache and sore throat. At the site of the wound red lines were radiating over to the shoulder and around the chest on either side. I still had doubts of the diagnosis, as my other patient was then but 24 hours ill, and neither had received the serum; the next day removed all question, and I immediately administered 20 c.cm. of the serum to this patient, repeating the dose on the evening of this day and in the morning and evening of the following day; no effect followed, for on the third, as well as on the fourth, fifth, sixth and seventh days the temperature remained high, and not until the eighth day did it begin to decline, while the erysipelatous inflammation of the skin was traveling around the chest, up to the head and to the limbs, regardless of the



Case No. 3. Diagnosis—Incised wound right shoulder. Revise—Erysipelas. Name, Walter S. Age, 30 years. Nativity, American. Diet, whiskey, milk. Treatment, 20 c. cm. injections of Antistreptococcus Serum, two daily, 4 in all. Acetanilid. Strychnia and Morphia. Quinine. Tinct. Ferri Chlorid. Icthyol and Lanolin, 33 per cent. ½ per cent. Oil Gaultheria. Result, recovery.

enormous amounts of serum I had been using; but this much I can say, wherever I made the injections the tissue remained entirely free from the inflammation. This may have been due as much to the "trikresol" or other antiseptic added to the serum as to the serum itself. One point I may add, on the eighth day, finding that despite the treatment the disease progressed, I used with a hypodermic needle a mild solution of carbolic acid and injected this around the edges of the inflamed areas; locally, ichthyol in 33 per cent. ointment with ½ per cent. oil gaultheria was used.

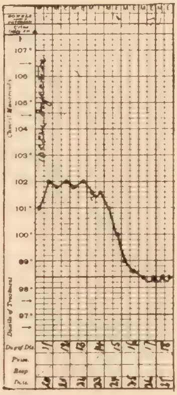
Case 4.—This was a recent injury. An infant, aged 13 months, had fallen and cut its eye and was brought to my office during the days when erysipelas was so prevalent; that was on January 19th; I had already employed the serum in one of my cases, and had two others to whom I had not given the serum:



CASE NO. 4. DIAGNOSIS—Incised wound over eyelid. REVISE—Erysipelas. Name, U. Age, 13 months. Nativity, Philadelphia. Diet, milk. Treatment, 10 c. c. Antistreptococcus Serum, in two injections. Quinia gr. ½ every two hours. Whiskey, drops v every two hours. Tinct. Ferri Chlor. gtts. iii every two hours. Icthyol 33 per cent. Lanolin and Oil of Gaultheria. Recovery.

I had just returned from the cases when I was called to treat this one; I very carefully dressed the cuts, and felt safe, but the next day, the fever occurring, I immediately injected the serum in 5 c.cm. doses. This, I may add, even before there were any visual evidences of erysipelas. I gave the serum as an immunizing remedy and repeated the same quantity the next day, when I found the fever persisted. Now in this case I felt reasonably certain that I was early enough with my remedy, and whatever virtues it possessed as a specific for strepto-infection should be demonstrated here. Failure resulted and I had to pursue the same methods of treatment until recovery resulted.

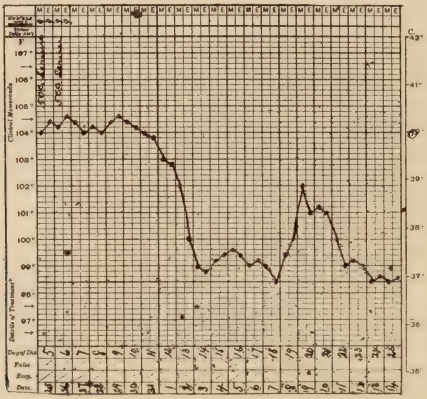
Case 5 was a colored youth, who had received a contused wound over the tibia. This resulted in an abscess, and was opened by me some ten days before he became infected with the erysipelas. My visit to this case had been daily so that I had visited him on the 17th, 18th and 19th days of January, the days that I was injecting the serum in my other cases. This boy had a normal pulse and temperature until the morning of the 20th, when, his temperature being 101° F., I immediately injected 10 c.cm of the serum. The fever continued despite this, and I changed my treatment; incised the limb wherever necessary; injected carbolic acid at the ends of the inflammatory spaces; irrigated with corrosive sublimate solution, and kept corrosive sublimate on gauze constantly to the parts. On the fifth day (if the serum had been successful it would have been the third day) the temperature began to decline and the case returned to the normal in three days



CASE NO. 5. DIAGNOSIS—Contused wound over tibia, and abscess resulting with erysipelas. Name, F. Nativity, American. Diet, milk, and generous diet. Treatment, 10 ccm. Antistreptococcus Serum, in one injection Quinine. Tinct. Ferri Chlorid. Corrosive Sublimate 1-1000 daily. 1-5000 Compresses, afterwards Iodoform dressings. Result, recovery.

Of this remarkable group of cases No. 6 is perhaps the one of greatest interest. As recently vaccination has assumed a "medico-legal" standing my position could be imagined had the case been unfortunate or my patients belligerent.

Case 6.—Mamie G., aged 7 years, a school girl, had been vaccinated by myself on the 19th of January. After first washing the arm with soap and water and then with corrosive sublimate gauze soaked with alcohol I made the vaccination with a new needle and used glycerinized vaccine virus (the New York Board of Health). Over this I placed a temporary shield; orders were left to remove the shield and tie a clean handkerchief or similar article around after 24 or 48 hours. The vaccination "took" from the start, and my advice was followed, but on the fourth day the arm began to sting and burn and itch. The mother of this patient, having five other children and becoming familiar with vaccination, thought nothing of this, but when the throat became sore I was at once sent for. I made injections of the serum at once and repeated the same the next day. At the same time I injected the area with a ½ of 1 per cent. carbolic acid solution, and used the iron, quinine, whiskey, ichthyol, etc. The result as regards the serum was the same in this case as in the others. I concluded that through erysipelas was resident with me, the remedy was not. On my return home I took all my dressings, bandages, gauzes and cottons and placed them in my furnace; fire was more omnipotent than serum. All my instruments were boiled, cleaned, regilded or renickeled, or sharpened. In fact everything in my possession that I had in any way touched I had cleaned or destroyed and since then I have had no case of erysipelas to record.



CASE NO. 6. DIAGNOSIS—Herpes Labialis, Vaccination. REVISE--Erysipelas. Name, Mamie G. Age, 7 years. Nativity, Philadelphia. Diet, milk, beeftea. Treatment, 2 Injections 5 c. cm. each Antistreptococcus Serum. Tr. Chloride of Iron. Quinine. Icthyol 33 per cent. Lanolin. Oil Gaultheria ½ per cent. Injections of Carbolic Acid ½ of 1 per cent. Result, recovery.

I might add that many of my professional friends had erysipelas in their practice, and it may have been possible that the epidemic I have thus described might have been an incident, or rather a coincidence. I personally felt that the question of the origin needed no investigation.

Now the most pertinent question to my mind is: Why is it that the antistreptococcic serum cures some cases of erysipelas and fails with others?

Surely the results that prompted Marmorek and others, myself included, to advocate the use of the antistreptococcic serum in erysipelas were the honest efforts of the clinician to test the specific virtues of a remedy, and if these results were failures, the record as failures would have been the object of the experimental clinician the same as a success, for failure of a certain method of treatment carries with it more influence than success.

I can therefore testify that in the former experiments with the serum the methods employed were similar to these, and while the results are vastly different the causes thereof must be sought in one of two conditions. Either the antistreptococcic serum has become inferior, and the makers thereof have become extremely lax in their methods of manufacture, or "surgical erysipelas" is a disease entirely different in the cause and character from the "idiopathic or medical erysipelas."

It is a well known fact to the bacteriologist that the streptococcic bacteria are not analogous, or, in other words, there are various kinds of streptococcus. Again, the serum made from a certain kind of streptococcus is specific only to the disease engendered by that same germ. It is then a correct solution of these failures to say that the antistreptococcic serum employed in the treatment of surgical erysipelas was not the correct kind of antistreptococcic serum, for, whereas, this serum might with benefit have been used in septic conditions resulting in puerperal diseases or idiopathic erysipelas—having been obtained from the germs of this disease,—it is wholly inert in surgical erysipelas or the like.

Another answer to my question is: The purity of the serum itself. As with diphtheria antitoxin so with the various serums—their therapeutic character depends on the reputation of the firm that makes it, and it is a very serious evil that confronts the users of these remedies that no specific tests have been adopted by the United States Pharmacopeia to be taken as a guide or an additional security of the standard of these preparations.

In recording the results of my experiments in these cases I may also add, that to my mind the failure was due to the inefficiency of the particular preparation I was using.

517 Pine Street.

SOCIETY REPORTS

PHILADELPHIA PEDIATRIC SOCIETY.

Stated Meeting, June 10, 1902.

The President, Dr. Samuel Mc C. Hamill, in the Chair.

Drs. J. H. McKee and J. H. Gibbon exhibited a child of five years with **stricture of the esophagus and tuberculous abscess** in whom gastrostomy had been done with improvement. She had swallowed lye in September, 1901, and had subsequently been treated in a hospital for stricture of the esophagus, but had not improved.

When seen in the Polyclinic services of Dr. Gibbon and Dr. McKee, she had exhibited emaciation, a hectic flush, a harsh laryngeal cough, large mucous râles and irregular vomiting of food and mucus; she also displayed the signs of consolidation at the left base. After several negative examinations, tubercle bacilli were repeatedly found in the sputum. The emaciation continued, and the temperature was irregular. It was determined therefore to subject the patient to the operation of gastrostomy.

Following the operation she had for two months been fed solely through the tube, with resulting gain in flesh, disappearance of the mucous râles, of the fever, and of the tubercle bacilli from the sputum, and almost complete cessation of the laryngeal cough.

The reporters believe that she had suffered from a retroesophageal or a postesophageal abscess, and feel that the case, from several standpoints, is quite unique. At a later date an effort will be made to dilate the stricture.

Dr. J. H. Gibbon said that Dr. McKee had described the points in the case which would appeal most strongly to the Pediatric Society and that he would speak only of its surgical aspects. The diagnosis of stricture was quite certain before operation. Its exact site, however, had not been ascertained; and it was thought that the passage of an esophageal bougie might be harmful, as an ulcerative process was believed to be going on at the site of the stricture. Locating the stricture was therefore deferred until the child was under ether, when a soft rubber catheter was passed into the esophagus; but when it had been introduced to a considerable distance there was a sudden gush of pus and it was necessary to withdraw the instrument quickly and was considered inadvisable to reintroduce it. The presence of pus at the site of stricture was sufficient evidence of the danger accompanying the passage of even a soft instrument. The abdomen was quickly opened, and a Kade gastrostomy was performed, this operation being chosen in preference to either the Sabanijew-Frank or the Witzel operations, because the fistula produced closes without difficulty. The child recovered well from the operation, and at the first change of the tube which was introduced pus was found in the stomach. Dr. McKee had noted the striking improvement made by the patient, and, what is more remarkable still, the disappearance of tubercle bacilli from the material which the child coughed up. Dr. Gibbon thought that the ulceration of the esophagus and the abscess in its neighborhood had about healed, and he intended as further treatment to dilate the stricture with bougies, passed through the mouth, if possible, or if this is impracticable, to divide the stricture and stretch it, according to the method of Abbe. The case illustrated well the principle of surgery, that when an organ is the seat of a marked ulcerating process nothing gives such prompt and satisfactory relief as putting the part completely at rest. The mere performance of a gastrostomy in some of these cases of ulcerating stricture will result in healing of the ulceration without a marked constriction of the esophagus. The result obtained in the present case shows that the operation is warranted even in severe and complicated cases. A further complete report of the case will be made when treatment has been directed to the esophageal stricture.

Dr. Hamill asked at what distance from the mouth was the stricture encountered.

Dr. Gibbon replied that he could not tell positively. He believed that it was low down, because before the operation there was much tenderness over the stomach and the catheter seemed to pass far down. He was, however, obliged to withdraw the instrument very rapidly because of the sudden gush of pus, and consequently he could not tell, from the introduction of the catheter, exactly where the stricture was situated.

Dr. L. C. Peter presented a case of **postdiphtheritic palsy limited to one arm,** in a child of two years. In the third week of a moderately severe attack of diphtheria the child gradually developed a flaccid palsy of the right arm, forearm and hand, with marked wasting in the extensor group, the dorsal interossei and the palmar muscles. There was neither palsy of the soft palate nor of the other extremities; the knee-jerks were normal; the biceps tendon-jerk was absent on both sides. The child improved rapidly, and can now execute most of the arm and forearm movements, though the small muscles of the hand are considerably wasted.

Cerebral palsy was eliminated by the normal knee-jerks, the marked trophic wasting and the absence of spasticity; infantile palsy by the absence of the usual history of the prodromes, etc., and by the distribution of the palsy and the rapid general improvement. The child showed some signs of rickets, but these were not so marked as to suggest that disease as a cause for so complete a palsy with decided trophic wasting. Against a new nerve injury were the absence of history of injury and the rapid improvement in the paralyzed parts, together with the total absence of pain.

Dr. Burr said that the case was surely very unusual. As a general rule, palsy of one arm or leg does not occur as the result of diphtheria itself, and of course is not a true diphtheritic palsy, but is secondary, and caused by some complication. In this case the palsy, said Dr. Burr, is certainly not central, but is either spinal or peripheral. It could have been caused by a very small area of softening due to vascular disease in the cord. If the palsy were diphtheritic the prognosis would be correspondingly good. In the infectious fevers local arm or leg palsy does occur.

Dr. McKee, when a resident at the Philadelphia Hospital, had seen in the service of Dr. Wharton Sinkler a case of generalized diphtheritic paralysis. Eventually the diaphragm had become paralyzed and the man had perished with symptoms of gangrene of the lung. An autopsy could not be procured.

Dr. Peter, in closing, said that when he first saw the case he did not feel that it was a diphtheritic palsy, but that the longer he studied it the more strongly he was convinced that it was diphtheritic in origin. As to injury, there was no history of this; and if the injury had been serious enough to produce so marked and extensive a palsy, it seemed hardly probable that so much recovery would have occurred in so short a time—about four weeks. Dr. Peter mentioned that 4000 units of antitoxin had been used early in the case.

Dr. D. J. Milton Miller read a brief note of a case in which the time required by an improper food to produce **scorbutic symptoms** was accurately noted. The case was that of an infant of 14 months, which from its earliest days had difficulty in digesting cow's milk unless diluted much below the proportion proper for its age. Attacks of indigestion were very frequent. Under a most careful system of feeding it gradually increased in strength and weight, so that at 12 months its weight was about 17¾ pounds. At this age a very severe attack of indigestion occurred, which, not yielding to various modifications of milk, and whey and milk, was promptly and completely relieved by condensed milk and barley water.

To this fresh cream was added and with the condensed milk slowly increased, until at the end of seven weeks it was taking a mixture containing approximately 3 per cent. fat. and 1.25 per cent. proteids.

The child had increased in weight, but pronounced symptoms of scurvy had appeared, swollen and bleeding gums, epistaxis, and tenderness and swelling above the left ankle. Under proper treatment complete recovery was established at the expiration of a week.

The case was thought worthy of record, in that it demonstrates the short time (seven weeks) in which scurvy can be induced by an improper food—an observation not hitherto recorded, and also because it teaches us to be on the lookout for the first indications of such symptoms when we are feeding an infant temporarily, as we are sometimes compelled to do, on preserved, condensed, or proprietary foods.

Dr. Bernd referred to a case that he had seen several years ago, the child of a French woman, who had nursed the child from the beginning. There was a history that the child had had fallen down stairs and a nose-bleed was attributed by the mother to injury. It was, however, an excessively persistent epistaxis, lasting for over 24 hours; and the child had hemorrhagic spots scattered over its whole body-surface. It was treated for scurvy and recovered rapidly. It was very notable that the child had never had any food but breast-milk up to that time.

Dr. John H. Jopson reported two cases illustrating conditions arising from persistence of the thyroglossal duct. The first was that of a girl of five with a **cystic tumor** in the anterior median line of the neck, overlying the larynx, and with a continuation which ran upward beneath the hyoid bone. It had developed two years before, was movable, and ascended and descended on swallowing. The tumor was removed. It was a cyst containing mucus, with a prolongation containing a central lumen that ran upward and backward in the median line beneath the hyoid bone.

The second case was in a male adult, 23 years of age, who presented a sinus in the median line of the neck, ⅓ inch above the thyroid cartilage. When eight years old a swelling had appeared in this location and an abscess had formed and was opened. The sinus had followed this and had persisted ever since. It gave exit to a saliva-like fluid, the quantity of which increased during eating. A small probe inserted into this sinus passed in the direction of the hyoid bones and the sinus could be palpated from without as a hard cord passing in the same direction.

A third case that he had seen was mentioned. The condition had recurred in this case after several attempts at its removal.

The origin and nature of these conditions are explained by a study of the embryology of the thyroid gland. They are due to persistence, in a part or the whole of its course, of the thyroglossal duct, which forms the median portion of the thyroid gland. The tumors and cysts developing from it may be located at the base of the tongue between the hyoid bone and the larynx, in the floor of the mouth, or below the hyoid bone, and their chief characteristic is their location in the median line. They must be diagnosticated from ordinary tumors and cysts in this locality and from the branchial cysts, which are also of a vestigial nature, but which are rarely located in the median line.

The only effective treatment consists in thorough extirpation, which is difficult, as shown by the frequency with which recurrence takes place after operation.

DR. HAMMOND'S CASE.

Dr. L. J. Hammond exhibited specimens of **supernumerary hyoid bone and thyroid cartilage** removed from a child 18 months of age. The larger specimen was believed to be a supernumerary hyoid because of its position in the side of the neck and its close resemblance in shape to the hyoid bone, both the greater and the lesser cornua being distinctly recognizable on one side of the specimen, the lesser cornu being less marked on the other side. The specimen was removed from loose areolar tissue on a level with the upper part of the thyroid notch, the dissection being carried as deep as the thyrohyoid membrane. Before operation the appearance was that of a projection about an inch in height which showed a distinct notch between the two cornua.

DR. HAMMOND'S CASE.

The smaller of the two specimens resembled the lighter lamellæ of the thyroid cartilage as closely as possible, its form was distinctly quadrilateral, and there was an oblique ridge corresponding with that on the normal thyroid serving for the attachment of the muscles. The growth seemed to spring from the connective tissue on a level with the thyroid, just anterior to the anterior border of the sterno-cleido-mastoid muscle.

The only way in which these embryological structures could well be classified seemed to be as supernumerary bone and tyroid cartilage.

Dr. Jopson asked as to the appearance before the operation.

Dr. Hammond replied that the appearance was merely that of a projection on each side of the neck, the larger, about an inch in height and notched and the other the smaller. They must, of course, have been offshoots from the lower cleft.

Dr. Jopson suggested that the objects removed were very probably anomalous derivatives of the lower branchial clefts, and were analogous to the supernumerary auricles which sometimes develop from the upper branchial clefts.

McGill University.

It is reported that the faculty of McGill University has concluded to ask the Dominion Government for an enactment to inaugurate a five years' course in medicine.—*Woman's Med. Journal.*

Dormitory for Sanitarium.

Henry Siegel has presented $20,000 to the Stony Wold Sanitarium for a dormitory in memory of two of his trusted employees, who died from tuberculosis, and a memorial tablet will be placed in the dormitory. The gift is conditional on the raising of a sufficient sum to finish the structure.—*Journal A. M. A.*

To Regulate the Sale of Vaccine Virus, Antitoxins, etc.

The United States Senate on June 30th enacted a measure to regulate the sale of viruses, serums, antitoxins and analogous products in the District of Columbia and to regulate interstate traffic therein.—*N. Y. Med. Jour.*

SOCIETY FOR THE STUDY OF DISEASE IN CHILDREN.

The Annual Provincial Meeting of the Society was held at the Children's Hospital, Pendlebury, Manchester, on Saturday, June 21, 1902.

Dr. HENRY ASHBY (Manchester) in the Chair.

Dr. A. E. SANSOM read a paper on **heart disease in children.** He said the chief affections of the organ were rheumatic but not always, and were not often associated with painful and diseased joints. The principal groups were (1) the temporarily swollen and enlarged heart of rheumatism; (2) the heart of rheumatic pericarditis; (3) the heart of rheumatic endocarditis with resulting valvular disease; (4) the heart of slow and insidious rheumatic endocarditis inducing mitral stenosis.

Dr. CAUTLEY showed a specimen of **atresia of the conus pulmonalis and patency of the septum ventriculorum.** The child died at the age of 12 months from cardiac failure during an attack of dyspnea. He thought cases of congenital heart disease should be divided into two groups (1) those due to developmental error and (2) those due to fetal endocarditis. Occasionally the two factors might be co-existent. He regarded congenital syphilis as the first cause of developmental error.

Dr. Theodore Fisher thought the most striking feature of heart disease in children was pericarditis. Dilatation slight in amount occurring in rheumatism was not serious. He thought myocarditis and pericarditis showed that the heart was poisoned, as a whole. He agreed with Dr. Cautley's classification of congenital heart disease. A patent foramen ovale was very common and could be found in one-fourth of adult post-mortems if looked for.

Mr. W. P. MONTGOMERY read a paper on **the results of tendon transplantation in 23 cases of infantile paralysis of the lower extremity.** The cases were classified into various groups and the results of the various methods employed were given. The work of re-education was often very slow but the final state good. A number of cases were shown in the wards prior to the meeting.

Dr. GWYNNE (Sheffield) read the notes of a case of **infantile paralysis of the leg,** which he had treated by excision of the knee, ankle and tarsal joints. The result was most satisfactory and the boy could walk well, though with a stiff leg. There was no deformity except some shortening.

Mr. R. Clement Lucas spoke of the old-fashioned way of treating such cases by tenotomy, with results which were not encouraging and of the great advance of present methods. He had himself done more in the way of excising the bone in the extreme cases of deformity than had been done in the present series.

Mr. Walter Edmunds thought the cases were very successful and regretted the shortness of the time at the disposal of the society for the discussion.

Mr. Collier agreed that the best way was to graft tendon on to periosteum if that could be done and the tendons were long enough. He had more experience in arthrodesis in cases where the limb was flail-like.

Mr. R. Clement Lucas read the following communication **A case of displacement of both testes in a person with an inguino-perineal hernia on the right side.** No deformity had been noticed till the sudden descent of a hernia on the right side at the age of three years drew attention to the displacements. A photograph showing the double displacement was shown. A radical cure of the hernia and replacement of the testes had been effected.

Dr. Sydney Stephenson read a paper entitled "**Fleeting amauroses in children presenting symptoms of meningitis,**" giving a series of cases in children who, while suffering from symptoms indicative of posterior basal meningitis became blind without ophthalmoscopic changes. Sight was ultimately completely recovered.

Mr. R. C. Dun read notes of a case of **hypertrophy of the right great toe,** showing radiograms, photographs and a cast of the foot. The deformity occurred in a girl of 7½ years, and no overgrowth was noticed until the child was five years old. The whole of the tissues of the toe were increased, the bones taking part in the hypertrophy. The greatest development was of a lipomatous nature. A definite fatty mass was present on the dorsal surface of the terminal phalanx.

Mr. Lucas said many such cases of hypertrophy were naevoid lipomata, and asked if there was any naevoid condition of the toe.

Mr. Dun replied in the negative.

After a vote of thanks to the chairman and the hospital authorities for the use of the hospital the meeting terminated.

BOOK REVIEW

THE ARTIFICIAL FEEDING OF INFANTS. Including a critical review of the recent literature of the subject. By Charles F. Judson, M.D., and J. Claxton Gittings, M.D., of Philadelphia. 8vo, 368 pp. J. B. Lippincott & Company, Philadelphia. 1902.

The authors of this book "aim to place before the medical profession a thorough and reliable account of the principles and methods of artificial feeding in vogue at the present day." They add that the substance of the work has been gleaned from all authorities—writing in the past eight years.

A short historical chapter is followed by other chapters on Cow's and Mother's Milk, on Digestion, Modern Methods of Infant Feeding, Weaning, Care of the Milk, Bacteriology, Sterilization, Premature Infants, Home Modification, etc. An Appendix of Formulæ, a copious Bibliography, and an Index are added.

The book contains a large amount of information from authoritative sources, though we cannot but regret that wholesale quotation of various writers has caused so many of what the authors acknowledge to be "repetitions and conflicting statements." There is, however, much to praise and not a great deal to criticise, barring the apparent attribution on page 301 *et sg.* of Dr. Fielding Lewis Taylor's formulæ to Dr. Westcott. These formulæ of Dr. Taylor's first appeared in PEDIATRICS over two years ago and have not been in the least modified by Dr. Westcott, except by placing numbers where Dr. Taylor originally used symbols.

There will necessarily be differences of opinion among doctors about many smaller matters in the book upon which the writers lay stress, but where most of the work has been laborious and thorough, it would be invidious to raise too many trivial objections.

ABSTRACTS

DON'TS FOR DOCTORS.

The *Practitioner* makes some amusing quotations and comments relative to a recent article in *American Medicine* by Dr. Rockwell, of Worcester, Mass.:—

Passing to matters more directly concerning medical practice, Dr. Rockwell gives some shrewd advice on various subjects. The following are pregnant sayings:

The most important thing in therapeutics is a knowledge of what *not* to do.

The most dangerous member of society is the doctor who never makes a mistake.

In medicine more truly than in any other field of human activity "all things are possible." It is well to bear this in mind.

He cannot obtain the highest professional success who knows only medicine.

Find out who "runs" the family, and then you "run" her;—this discovery will prove of great value.

Administer medicine personally whenever possible. The dose that you give has a higher curative potential than that administered by the patient's friends.

Never prescribe anything until you have perfectly definite and distinct reasons for so doing.

Don't blame your nurses for everything. They have some rights, and are not always conspiring to do your patient harm or put you out of the case.

Expedition in performance is almost as important as accuracy in performance. Do your work with precision and despatch.

Never "give up" a patient.

This last piece of advice deserves to be written in letters of gold. Sir James Paget strongly urged that even in the most hopeless-looking cases of cancer the practitioner should never merely fold his hands in despair. This simply makes medical practice the "meditation on death" which was imputed to some of the old Greek physicians. The doctor should dispute every inch of ground with the enemy, and should take as his rule of conduct an adaptation of an old saying, *Dum spirat spero.*

With regard to this point we may be allowed to relate an instructive story, which, though it may have been told before, will bear repetition. A patient had enlargement of the liver. Sir William Jenner, who was called in, with characteristic frankness pronounced the disease to be cancer, for which there was nothing to be done, and went his way. The friends thus left to struggle with a hopeless situation sought counsel of another oracle. Sir Andrew Clark was summoned, and after careful examination agreed that there was a tumor which was not indeed of a benignant character, but which, if not exactly curable, could be considerably alleviated by the resourcess of medical science. Sir Andrew continued to attend the patient till his death, several months afterward; and even if his life was not prolonged, it was certainly made much less burdensome to himself and to those about him by the physician's *savoir faire.*

Some of Dr. Rockwell's maxims relate to what practitioners without practice call the vulgar arts which lead to success· Thus he says—

Make it a point to meet and impress favorably at least one new person every day.

This might in our effete old country be regarded as pushfulness. In any case it is a trifle dangerous. A cynic has said that when you have made a good impression in any company you should at once go away. It is a fact that a good impression is very easily blurred, and the attempt to make a new one every day is scarcely likely to ensure permanence of result. Other maxims are less questionable. The following contains a truth of which too many practitioners need to be reminded—

Don't tell your neurasthenic there is nothing the matter with him; it is not the truth.

Another conveys a counsel of perfection which it is often quite impossible to follow in practice—

If you cannot tell a patient the truth, don't tell him anything.

Perhaps the most valuable of all Dr. Rockwell's maxims is the one following:

Possess yourself of an irresistible, indestructible optimism. It is the keystone of the arch, success.

We are reminded of the story of Sir Richard Quain's professional *début.* When a young man he was taken by an experienced physician to see a serious case. Before entering the sick-room he composed his features to a gravity which he thought appropriate to the occasion, but was at once rebuked by his mentor, who exclaimed: "For heaven's sake, man, don't look so funereal! The poor devil will think you are the undertaker.

HUMAN AND BOVINE TUBERCULOSIS.

Dr. J. G. Adami, of McGill University, thus sums up his conclusions in a valuable paper in the *Medical Chronicle* for March, 1902:

1. Bovine tuberculosis is easily conveyed from cattle to cattle, and whether by inhalation (the most common method), by the milk (in calves), by contamination of stalls and drinking water through the agency of the saliva and nasal discharge, through the genito-urinary passages, or by intrauterine infection (very rare), this transmission from one animal of the bovine species to another is far and away the commonest mode of infection in cattle.

2. Human tuberculosis is transmissible to cattle. Pure cultures of the bacilli rarely cause infection. Mixtures of tubercle bacilli with other microörganisms (as in sputum) appear to be more infectious. The diffi-

culty in inducing artificial tuberculosis favors the idea that natural infection of cattle with human tubercle bacilli must be of singularly rare occurrence.

3. Certain breeds of swine appear to be fairly easily infected with both human and bovine tubercle bacilli, but conditions favoring transmission from man to the hog and from the hog to cattle, so rarely show themselves that, again, for practical purposes, this mode of infection may be neglected.

4. If this be so it should be possible to eradicate bovine tuberculosis in a region in which human tuberculosis continues to be widespread.

5. Human tuberculosis in the majority of cases is conveyed from human being to human being by inhalation, more rarely it is conveyed through the alimentary tract, still more rarely through surface wounds, and from the mother to the fetus during intrauterine life.

6. Everything points to the fact that in the main the bacilli causing infection in man are derived from previous cases of the disease in man.

7. By sojourn in the human body and passage from man to man the human tubercle bacilli have acquired properties differing from those acquired by bacilli which have passed through cattle; their shape differs, the rate of growth and the appearance of the growths outside the body are different; their virulence towards the animals of the laboratory is also different.

8. These differences are not, however, sufficiently marked or constant to permit us to conclude that we are dealing with distinct species. On the contrary, the evidence at our disposal points clearly to the fact that in the different species of animals we encounter at most only *races* of tubercle bacilli.

9. Bovine tuberculosis can be transmitted to man and this either through wounds or through the digestive tract.

10. By passage through cattle the tubercle bacillus gains increased virulence for cattle, rabbits and guinea pigs, but lessened virulence for man and (it would seem also) for carnivorous animals.

11. Save in the very rare cases of wound infection, there is a significant lack of evidence that bovine tubercle bacilli infect adult human beings.

12. It is infants and those of early age who are liable to be infected by the tubercle bacilli of bovine origin, and this through the agency of milk. The statistics bearing upon the continued frequency of tuberculosis in children and upon the relative frequency of intestinal and abdominal tuberculosis in children must be accepted as conclusive evidence upon this point.

13. Even with children a consideration of the great frequency of bovine tuberculosis in certain regions and of the absence of any record of tuberculosis affecting those supplied from a given "milk-round," leads to the conclusion that the bovine bacilli have not heightened virulence.

14. The few positive records we possess of direct transmission of tuberculosis from cattle to man, through the agency of the milk, indicate that infection is brought about only by the employment of milk of cattle which are very extensively diseased, more especially of those suffering from udder disease. Such milk contains enormous numbers of bacilli.

15. Animals showing physical signs of tuberculosis (for mild grades of the disease show no physical signs) and, above all, those exhibiting udder tuberculosis should therefore be condemned.

16. Where there is tuberculosis in a herd, Bang's method should be employed, the animals reacting to tuberculin being separated from the healthy ones; the milk from the reacting animals, for whatever purpose used, should be pasteurized, so as effectually to destroy the tubercle bacilli.

17. The great cause of infantile mortality is inflammation of the stomach and intestines (gastroenteritis and "diarrhea"), and this is proved to be mainly brought about by the use of badly kept and fermenting milk. Wholly apart therefore from the question of tuberculosis, it is imperatively necessary that greater care should be exercised by all concerned in the distribution of milk.

Had this been more fully realized, had the agitation (in England especially), for municipal and governmental supervision of the milk supply and for the distribution of pure milk been based upon what we know concerning contaminated milk in general and its dangers, rather than, as it was, upon the danger arising from tuberculosis, it is safe to say that Koch's address would not have had nearly the same deleterious effect.

CULTURE TESTS FOR GONOCOCCI.

Dr. G. D. Bondurant (*Med. News*, May 31, 1902) writes as follows: In many cases cultural methods give much the more valuable results and should be resorted to in all cases of importance, when the necessary apparatus and technical skill are possessed. The culture diagnosis is the only absolute dependence in medico-legal cases. The following, after Wertheim, is a comparatively simple method of applying the culture test: A minute portion of the suspected discharge is thoroughly mixed with sterile liquid blood serum in a culture tube at a temperature of 40° C. Two dilutions are now made from this first inoculated tube and to the liquid serum contained in each of the three tubes an equal part of melted, sterile 2 per cent. agar-agar at 40° C. is added. The contents of each tube are then poured into a sterile flask or Petri dish and placed in an incubator at 37° C. Within 24 hours usually minute colonies will make their appearance in one or more of the dishes, the gonococcus colonies being colorless and semitransparent, with irregularly scalloped edges. These young colonies should immediately be transplanted to slant tubes of sterile chest-serum-pepton-agar, upon which, after a few days in the incubator at 37° C., characteristic colonies develop. Microscopic examination after staining with Loeffler's blue and by the Gram process will complete the identification of the true gonococcus colonies.

Slant tubes of nutrient agar upon the surface of which sterile blood serum has been smeared may be directly inoculated with suspected material, a good growth of gonococci being sometimes obtained. The danger that the colonies will be overgrown by other organisms is, however, much greater than when the dilution method just described is employed. Heiman's medium is also much used. It consists of pleuritic fluid or fluid from a hydrocele, fractionally sterilized, to which has been added 2 per cent. of the following mixture: Agar-agar, glucose, and peptone, each 2 parts; sodium chloride, ½ part. Slant tube cultures of gonococci are readily grown upon this medium. The addition of a little *acid urine* to any of the ordinary nutrient agar media is found to make possible the growth of the gonococcus upon them. A cultural characteristic of the gonococcus is its comparatively ready growth upon the special media just mentioned, and its absolute refusal to grow upon the nutrient culture materials commonly used in laboratories for the study of the bacterial growths.

The culture test, when carefully carried out, is much more accurate and more delicate than the most skilfully conducted microscopic examination, often revealing the presence of gonococci when prolonged search with the microscope in stained preparations had given only a negative result. By cultural means gonococci have been detected in the blood, in joint effusions, in salpingitic pus, on the heart valves, and in the old, gleety discharges which were seemingly free from gonococci.

The adequate bacteriological diagnosis of gonorrhea is thus seen to consist in more than the simple microscopical examination of anilin-stained films. Although time-consuming and calling for more skill, the cultural examination for gonococci in important doubtful cases will amply repay the physician for all trouble expended and the slide-spread staining method is not to be lightly regarded, since it frequently shows the nature of an acute urethral or other infection more quickly and accurately than any other diagnostic means at command. No physician should treat urethral inflammations without making, or having made, an examination of the discharge to determine the possible existence of specific infection, and no case of gonorrheal urethritis should be discharged as cured until all suspicious cocci have entirely disappeared from the discharge. In cases of which it is of great importance is be sure that a *cure* has been obtained, as when marriage is contemplated, a culture had best be made.

VARICOSE VEINS OF THE RIGHT UPPER EXTREMITY IN A CHILD.

Dr. Bertha E. Bush, in the *Woman's Medical Journal*, writes as follows:

This little girl is eight years of age and has had the present trouble all her life. Her parents are living and healthy, and her family history shows no similar case. One brother and one sister died of acute intestinal disease, each at the age of ten months, but were healthy at birth, and never exhibited any enlargement of the superficial veins.

The mother, since her first pregnancy, has had slight varices in the left popliteal space.

Present Condition.—The right upper extremity presents a general enlargement of the superficial veins along the anterior aspect of the thumb to the supra-sternal notch, with pouchy dilatations varying in size up to that of a small egg, on the thumb, in the palm, above the elbow and near the sterno-clavicular joint. The veins chiefly involved are the digital veins of the thumb, the veins of the palm of the hand, the radial and median in the forearm, the cephalic and basilic in the arm, and the superficial veins over the right external jugular as far as an inch and a half above the clavicle. During their course these vessels have a bluish color and an irregular, soft nodular feel, and the position of their valves is not readily seen. At the larger dilatations the skin is thinned but there is no bruit or pulsation, except at the neck, where the mass is lifted by the carotid impulse beneath. The radial pulse is weaker on the right side than on the left. The greatest structural changes are observed in the right hand, which is wider and smaller than its mate and shows a large mass occupying the radial side of the palm, and extending between the metacarpals, to the dorsum of the hand. On the inner side the first joint of the thumb is covered by a soft mass almost continuous with that in the palm. The first three metacarpal bones are shorter, smaller and more widely separated than those of the left hand. There is no paralysis and the muscles, though relatively weaker, enable the child to eat, play, sew and write with the right hand.

These masses are mottled and purplish in color, and are not ordinarily tender, but become so when they are much enlarged, as is always the case after violent exercise or during fever.

A progressive increase in the size and number of the large dilitations has been noted since infancy; those above the elbow enlarging about four years ago, and those at the clavicle having appeared the most recently. Outside of the circulatory organs the examination is practically negative; the lungs, kidneys, spleen and digestive organs are normal. There are no enlarged superficial lymphatic glands—no evidences of inherited syphilis. The child is 46½ inches tall, weighs 44 pounds, and is of active, nervous temperament, but shows no nervous disease, general or local. The action of the heart is at all times somewhat irregular, but no endocardial murmurs have been noted.

HYPERCHLORHYDRIA.

Dr. MAX EINHORN (*Amer. Med.*, June 21, 1902) writes as follows: The diet for hyperchlorhydria is yet a subject of great controversy. Some clinicians forbid starchy foods entirely and nourish their patients principally on an animal diet. Their reason for forbidding the starches is that the amylolysis in hyperacidity is greatly diminished, the acid checking the conversion of starch into sugar quite early. There is, on the other hand, quite a number of well known clinicians who forbid meats to patients with hyperchlorhydria on account of their property to produce an increased flow of gastric juice. They prefer a milk diet and the carbohydrates.

Another controversy exists with regard to the frequency of the meals to be advised. Some institute two meals daily with the idea of giving the stomach a long period of rest between meals; others again prescribe frequent meals, their object being to diminish the too great acidity existing at the height of digestion by the addition of another small meal and thus diluting the contents.

When such differences of opinion exist, personal experience seems to be of some value. I am in favor of frequent meals, three larger ones (breakfast, lunch and supper) and two or three smaller ones (consisting only of milk and bread and butter). The larger meals should consist of foods commonly taken at these meals with the exception of acid, too greasy and indigestible substances. Meat and eggs (hard boiled) should preponderate while all kinds of spices and highly seasoned foods should be avoided. I always permit patients to take considerable quantities of bread and butter, especially of the latter. It is only within the last two or three years that butter has been found, according to the investigations of Strauss and others, to exert a beneficial influence upon lessening the gastric secretion. My object in giving butter was, however, not with the intention of diminishing the gastric secretion, for formerly I knew nothing about it, but for the purpose of increasing the state of nutrition which in most cases is essential.

The medicinal treatment consists in administering alkalies one to two hours after meals. Plain sodium bicarbonate may be given in one-half to one teaspoonful doses t.i.d. In cases of constipation it is best to combine the sodium bicarbanate with calcined magnesia or with calcined magnesia and rhubarb.

The bromides are likewise of great benefit in this affection, especially if we have to deal with persons presenting other symptoms of nerve irritation (headache, sleeplessness, discomfort, etc.).

The physical methods of treatment consist of electricity and hydro therapy. The intragastric faradization and also galvanization exert great benefit. A wet compress over the stomach at night is also often useful. The same can also be said of cold ablutions followed by a good rubbing of the chest and back. Lavage of the stomach is not essential in this trouble. Spraying the stomach with silver nitrate or protargol, or powdering it with suprarenal glandular extract, have appeared to me to be of value in cases of an obstinate character.

Within the last few years gastroenterostomy has been recommended off and on for the treatment of this malady. I do not generally approve of this surgical measure for this particular condition. I have several times seen cases in which a gastroenterostomy had been done for pyloric obstruction, but the patients suffered nevertheless after the operation from hyperchlorhydria, showing that gastroenterostomy does not always necessary remove the trouble. Besides, patients with simple hyperchlohydria. i.e., not complicated with ulcer, almost always get well by the simpler methods of treatment.

THE DIAZO-REACTION AS A METHOD OF DIAGNOSIS IN CLINICAL MEDICINE.

H. W. Syers writes as follows in the *Brit. Med. Jour.* for May 24, 1902: Much has been written of late upon the value of the diazo-reaction as a test for enteric fever, but it still seems that opinions are by no means unanimous as to the worth of the test in the diagnosis of this disease; and it has certainly been proved that the reaction occurs in maladies other than enteric fever, of which diseases tuberculosis is the most important, Acting on the above principles I have examined the urine in 125 cases of all kinds and descriptions for the diazo-reaction. The cases have not been selected in any way, but the process has been applied in the out-patient room and the result noted.

Of these 125 cases in which the urine was examined, 5 only gave a positive reaction. In 120 instances no result whatever was obtained. Among those patients whose urine gave a negative result were instances of diseases of the lung of various kinds—phthisis, heart disease, gastric ulcer, bronchitis, etc.

The 5 cases were classified as follows: One was a case of acute tonsillitis, another of lobular pneumonia, 2 were cases of enteric fever in an early stage, and one was suffering from acute tuberculosis. The last patient was thought at first to have enteric fever. and this from a general consideration of history and symptoms. The occurrence of a positive reaction with the color test not unnaturally tended to strongly strengthen this view of the nature of the ease.

Nevertheless the event proved that the diagnosis was incorrect. Thus the diazo-reaction broke down just at the very point when it would be of the greatest possible use. The extreme difficulty, even the impossibility of differentiating typhoid fever from tuberculosis is generally admitted, and it is unfortunate that this test, so promising in many ways, should fail us in making a very important and difficult diagnosis.

Three other cases of enteric fever were carefully tested, but they all gave negative results. These cases were all in a more or less advanced stage of convalescence, which does not, however, render the occurrence of the reaction in any degree unlikely, for many cases are recorded in which the result was positive months after the attack of enteric fever had been recovered from.

I have also, subsequent to the above observations, made many examinations of the urine of patients suffering from typhoid fever, for the purpose of finding the diazo-reaction. Speaking generally, I have found that at some period of the fever the result was nearly always positive,and this usually at an advanced stage of the malady—that is to say,at the end of the second or early in the third week. Positive results were always most freely obtained when the temperature was high and the symptoms severe; in other words, they were always most obvious in well-marked and anxious cases.

The result of my observations, so far as regards enteric fever, is that the diazo-reaction is of little or no use in a practical sense. And this because it does not occur at a stage of the malady at which alone difficulties can readily arise—the early stage. Further, the liability of a positive reaction to occur in cases of tuberculosis is a most serious drawback and one which alone would tend to render the test valueless.

As regards the 125 cases,there was not once a positive reaction in the very numerous instances of gout and anemia, and the same applies to diabetes.

It has been stated that in phthisis the reaction only shows itself in those patients in whom the malady is far advanced, and that, therefore, the fact of its occurrence should be regarded as a danger signal.

My experience of the diazo-reaction in phthisis is not large, but I have had the opportunity of applying the test in very advanced cases of the disease. My results do not in any way agree with those which would mark the diazo-reaction, either as of usual occurrence in the later phases of the malady or, when it does occur, as being of any special significance. In ordinary cases of this description the result was negative, and when the reaction was positive there was no reason whatever to suppose that the case offered any special feature of gravity beyond that which is usual at the stage at which the affection had arrived.

CASE OF INFANTILE PARALYSIS, COMPLETE BUT TEMPORARY.

Dr, Judson S. Bury, in the *Brit. Med. Jour.* for May 24, 1902, describes the following case:

The want of correspondence in the distribution of motor weakness at different stages of the disease is one of the striking features of infantile paralysis. A consideration of the complete return of motor power in parts that were profoundly paralyzed would lead one to assume that in some cases the wave of recovery would spread to every part that was initially affected, yet, as a matter of fact, this rarely occurs. In nearly every case of acute anterior poliomyelitis some muscles are left permanently, even if only slightly, weak.

As an apparent exception to this rule, the following case is worthy of record:

A girl, aged 9 years, was admitted under my care at the Manchester Royal Infirmary on January 20th of this year. Her mother told me that on January 13th the child was "shaky and cold," that on the 15th she was shivering and her skin was very hot. On the 16th it was noticed that her legs seemed to fail her. On the 17th she was unable to get out of bed; at breakfast time she could use her hands, but a few hours later she was unable to move them. On the 19th she was very feverish, and on the 20th, the day of admission, her temperature was 103° F. On that day I saw her for the first time. She was lying in bed, unable to move any part of her body except the head; this she could raise from the pillow and move from side to side. She was unable to raise either side of her body from the bed, nor could she move any part of her arms or legs; her limbs were completely and universally paralyzed. She had no pain, and no alteration in cutaneous sensibility could be detected None of the cranial nerves were affected; the knee-jerks were absent, and no wrist-jerk was obtained; the action of the bladder seemed to be normal.

The possibility of diphtheria being the cause of the paralysis was considered, but there was no history of sore throat, nor were any cases of infectious disease known to exist in the neighborhood of the child's home. The fauces had a healthy appearance, and the urine was free of albumin.

On the 21st, the day after admission to hospital, the temperature was normal and the child could feebly draw up her legs in bed and could feebly move her arms; she could also very slightly raise her body from the bed. The improvement progressed rapidly, so that on the 27th, a week after admission, the paralysis of the arms had almost entirely disappeared; the legs, too, were much stronger, and when her body was supported the patient could walk a few steps; she was also just able to sit up in bed. A few days later she could walk without assistance, the flexors of the ankles being, however, still weak. She left the hospital on February 9th quite recovered from the paralysis, and the knee-jerks, which were feebly obtained a few days previously, were quite normal.

As to the site of the lesion in this case, the flaccid paralysis and the loss of the deep reflexes point to an affection of the lower neurons for the limbs and trunk. The absence of sensory and all other symptoms than paralysis indicates that the motor path was alone at fault. Which part of the lower neuron was affected? Was it the nerve cell or its axon? Was the case one of anterior poliomyelitis or one of peripheral neuritis? It is certain that instances of purely motor peripheral neuritis do occur, and in the present case the complete recovery speaks more for a peripheral than a central disorder. Still such great rapidity in the disappearance of symptoms as occurred in this case is probably as rare in neuritis as in poliomyelitis. Then again multiple neuritis in the child, apart from diphtheria, is rare, whereas anterior poliomyelitis is common. In favor of the latter condition, too, may be mentioned the completeness of the palsy.

SIGNIFICANCE OF HYPERPLASTIC AND TUBERCULOUS PROCESSES IN THE PHARYNGEAL TONSILS.

Floderus (*Hygiea*, Stockholm) believes that a large proportion of scrofulous children are tuberculous. He found enlarged submaxillary glands in 92.06 per cent. of several hundred children investigated, and enlarged jugular glands in 91.6 per cent. The pharyngeal tonsils were enlarged in 48.89 per cent. of the cases of much hypertrophy of the jugular glands, and the tonsils proper in 32.59 per cent. He emphasizes the importance of these findings as a menace to the future health of the child, believing that the morbid pharyngeal tonsils in particular are the source of descending tuberculosis later. The adenoid child is thus especially predisposed to secondary tuberculosis.—*Jour. A.M.A.*

THE EVAPORATION BATH IN TYPHOID FEVER.

Dr. J. Morgan Coffin speaks as follows in *American Medicine*, June 21, 1902: The technic of the bath is as follows: The patient is first placed on a blanket, then a layer of one thickness of absorbent gauze is fitted closely to the body surface. This is sprinkled with water at a temperature of 100°-112° F. An electric fan situated at the foot of the bed on a level with the patient's body furnishes the change of air necessary to dry the gauze. It was found that the average length of time required to evaporate 1 pint of water was 30 minutes. This therefore may be taken as the duration of the baths. The temperature was taken regularly every four hours throughout the course of the disease and the patient bathed at 102.4° F., or above. The immediate response and the response one-half hour after the bath was then taken both by mouth and rectum. No exact record of the temperatnre between the half-hour and the next regular four-hour period was kept, but in every case, though taken irregularly, it was found that the half-hour temperature would indicate what was to be expected one or two hours afterwards.

As to the results achieved, they were on the whole extremely disappointing.

THE THERAPEUTICS OF SPARTEINE.

Dr. THOMAS (*Revue de Thérapie*, lxix, No. 7) reports the results of his clinical observations on the action of sparteine. After subcutaneous injections of 5/6 grn. of sparteine sulphate, repeated two to three times daily, the diuresis was carefully noted. The amount of urine voided did not exceed 3 quarts. In this respect therefore sparteine is inferior to theobromine, which gives far better results, especially in cases complicated with a chronic hepatitis.

As to the cardiac effects of sparteine, the heart-beats become regular and strong after its administration, and this lasts a varying length of time, according to the condition of the organ. Sparteine seems to be more successful in cases allowing some delay than in those calling for prompt action.

Comparing sparteine with digitalis, the author finds the former less powerful, less durable, but also less cumulative and toxic than the latter in its effects. He has used sparteine in several cases of cardio-vascular disorders in typhoid fever with good results. He notes the absence of those phenomena of excitation which follow the administration of caffeine. Comparing these two drugs, the author reserves caffeine for cases requiring prompt cardiac stimulation, and after the crisis has been safely passed, he resorts to sparteine for regulating and reinforcing the heart.

The dosage of sparteine is a simple matter. The sulphate is easily soluble and suitable for injections and mixtures; it may also be prescribed in pill form, and not more than about 3 grn. in 24 hours should be given; hypodermically, 5/6 grn. three times daily should be the very highest limit.

In chronic cardiac affections, sparteine, while not detracting from the value of digitalis, may replace the latter and aid its action. Like digitalis, it favors diuresis, reinforces the heart, diminishes its dilatation and regulates its rhythm. The absence of cumulative effects and of toxicity, even if used over prolonged periods, make sparteine a valuable remedy. The chief indications are chronic myocarditis, the beginning of asystole and the subjective phenomena of cardiac irregularity, The coincidence of hepatic and pulmonary complications, on the other hand, calls for more energetic remedies,

In the course of infectious maladies, sparteine is indicated when we are in need of regulating and strengthening the heart.—*Merck's Arch.*

GONORRHEAL SYNOVITIS IN AN INFANT SUFFERING FROM OPHTHALMIA NEONATORUM.

On March 10th I confined Mrs. X. of a seemingly healthy child. On March 12th the mother drew my attention to a discharge from the child's eyes. She stated that she herself had suffered for several months from a discharge from the vagina. Later the husband admitted that six months previously he had had gonorrhea. The ophthalmia was a very severe one; it was treated by syringing with 1 in 5,000 biniodide lotion every two hours night and day. When fifteen days old the child developed a well-marked synovitis of the right knee. The case was undoubtedly one of gonorrheal rheumatism.

Gonorrheal rheumatism is very rare in infants. Clement Lucas, in 1885, first drew attention to the possibility of gonorrhea becoming generalized in infants. In the same year Zatvornitski described a case of rheumatism in an infant with ophthalmia neonatorum. In 1898 Heiman, in the *New York Medical Record*, mentions the case of an infant in which he found gonococci in the affected wrist. Clement Lucas, in 1889, read a paper before the Royal Medical and Chirurgical Society, stating that he had collected twenty-three cases of gonorrheal rheumatism in infants with gonorrheal ophthalmia. He noted that the condition was quite a transient one, with no tendency to ankylosis.—R. W. Innes Smith, *British Medical Journal*, June 7, 1902.

POTASSIUM NITRATE AND NITRITE IN VASOMOTOR TENSION.

It is a hackneyed saying that a man is as old as his arteries. With advancing age the vessels lose their elasticity and offer an increased resistance to the circulating blood. Increased resistance, in turn, leads to cardiac hypertrophy, and both changes bring about high blood pressure in the small arteries. The remote sequences are angina pectoris, cerebral hemorrhages, etc.

In angina pectoris we can rapidly reduce the blood pressure by means of amyl nitrite and nitroglycerine. Nitro-erythrol,or erythrol tetranitrate, in half-grain doses thrice daily, acts more slowly but also more permanently. These remedies suffice for angina.

Not so in cerebral hemorrhage, however. Here a gradual reduction of the tension in the vessels is desirable, and for this purpose Sir Lauder Brunton (*Deutsche Med. Woch.*, xxviii, 16) recommens potassium nitrate (salpeter). Only the common, non-purified salpeter seems to have the desired therapeutic efficiency, while the chemically pure is inert. This curious circumstance the distinguished author has found to be due to the admixture of potassium nitrite found in the impure salpeter. It is this combination of nitrates with nitrites which accounts for the felicitous action of impure salpeter. The latter may be efficiently replaced by an artificial combination of potassium carbonate, potassium nitrate and small doses of potassium nitrite—say, 30 grn., 20 grn. and ½ grn. respectively, at one dose, in a large glass of water.

This treatment, ordered once a day for a variable length of time, is recommended in all conditions of high arterial pressure, notably in gout. The author has achieved brilliant success with this method in a case of nose-bleed in a gouty patient.—*Merck's Archives*.

A HARBINGER OF UNIFICATION.

Dr. De Lancey Rochester, of Buffalo, justly expresses in the June number of the *Buffalo Medical Journal*, gratification at the unanimous election to membership in the Erie County Medical Association of a physician who had been regarded before as a homeopathist. His election followed close upon his protest against the use of the words "homeopathic physicians" in a resolution presented before a general meeting of the physicians of Buffalo. He is reported to have said that it was time to drop such qualifying adjectives, for sectarianism in medicine is really dead and it was wrong to keep up the semblance of it by the use of such misleading terms, and that, so far as he knew, no physician limited himself in his practice in such manner as the word homeopathy implied, and it was the manly and honest thing to come out openly and say so. It was Dr. F. Park Lewis who made this protest, and he was joined by Dr. A.T. Bull. We trust the day is not far off when their example will be widely followed by those whom the community looks upon as homeopathists.—*New York Medical Journal*.

PEDIATRICS

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EDITORIAL COMMENTS.

The Action of the Lymphatic Glands in the Absorption and Resorption of Fats.

A lengthy article on this subject appears in *Revue Mensuelle des Maladies de l'Enfance* for July, 1902, by M. A. Poulain from the laboratory of Professor Hutinel. The author first describes his physiological observations and then draws deductions concerning pathological conditions. He says that in the normal glands of the mesentery fat is easily studied by fixation with osmic acid. His studies on dogs at different stages of digestion show that at the commencement of the period of digestion a small quantity of fat is found in some of the sinuses near the capsule of the gland, some also in the medullary substance and in the afferent lymph vessels. But the intragangliar lymph-channels are by no means full of fat. Moreover, the sinuses which contain fat are often considerable distances apart, while many contain lymph which is colored only feebly, if at all, by osmic acid. If the gland is removed at the height of digestion, that is about four to six hours after the last meal, it is found to contain a large quantity of fat, part in the wandering cells and part in the sinuses. Fat is also found in the sinuses of the reticulum but not in the interior of the follicles. It is also found in the peripheral sinuses and in the afferent and efferent chyle ducts, but its distribution in the intragangliar passages is most irregular. In the hours which follow, the mesenteric glands contain a smaller and smaller quantity of fat. Finally the lymph is fat-free except for an occasional phagocyte which contains fat-granules which stain with osmic acid.

Now when an animal has been starved for some time, the lymph-channels contain no free fat. However, there are a number of phagocytes, found mostly in the sinuses of the connective tissue and lymph-vascular system,—a few also in the glands—which contain fat particles. The author holds that this fat contained in the leukocytes in starvation comes from the reserve fat of the mesentery and is being used to supplement insufficient alimentation. The same changes are also observed in the peripheral lymphatic glands in starvation when they also are found filled with leucocytes containing fat-granules. Hence the lymph-glands are concerned at one time with storing up fat and another with taking it up from its storage in the mesentery, skin and the like and adapting it for the needs of the body.

Now the evident disproportion between the lymph of greasy appearance which the fresh ganglion contains and the small quantity that is found in the ganglion when stained with osmic acid might be theoretically explained by supposing that the fresh gland contains both fat in combination with glycerine and fat transformed into some substance which is soluble in the solutions used in making sections for microscopic examination. This the author found to be the case. He washed the glands and tested the resultant liquid, which was found to contain soap. He then undertook to discover whether there does not exist in the glands a ferment capable of saponifying fat, a *lipase*. The latter hypothesis was also found to correspond with the actual conditions, and his methods for establishing his proofs are set forth. From the fact that the phagocytes still contain fat after it has disappeared from the rest of the gland he concludes that the saponifying substance is not contained in them. But on the other hand, from the histological distribution of the fat particles, he is rather inclined to consider that the ferment is contained in the small lymphocytes of the reticular tissue and especially in the follicles. He concludes that the lymphatic ganglia, and indeed all organs having a lymphatic structure, secrete a saponifying ferment different from the pancreatic ferment, and that these organs are one of the sources of the ferment that has previously been discovered by Hanriot in the blood. This *lipase* divides fats into fatty acids and glycerine and can also reform fat by synthesis. This double action belongs to several ferments.

The process of fat absorption then is somewhat as follows: Fat emulsified and saponified in the intestine by the bile and pancreatic juice passes the intestinal epithelium in a state of chemical separation. But it is recombined in the chyliferous ducts. From the intestinal villi to the receptaculum chyli it passes through a series of ganglia in the mesentery and undergoes, under the influence of this ferment, many changes. These consist in chemical separations followed by syntheses, the final outcome of which is the chemical and biological identification of alimentary fat with that of each species. If now alimentation be insufficient, the reserve fat is again emulsified and decomposed by the ferment of the lymphatic ganglia, having been taken into the lymph stream principally by the phagocytes. It is then utilized as a combustible hydrocarbon.

The author then details his observations concerning the action of these ganglia in the absorption and assimilation of fat when they are the seat of infective processes. In pursuing his studies, in a general way he divided infections into three groups according as the seat of the lesion was in relation with the axillary or other peripheral lymphatics, or the mesenteric glands, or the entire lymphatic system.

Now intestinal infections are, in the beginning at any rate, exclusively in relation with the mesenteric glands. In such cases there is stagnation of fat in these ganglia during the period of disturbed digestion where its saponification is much delayed. In mild or moderate infections there is an intense reaction of the reticulum of the ganglia also. The cells become phagocytic for fat. In severe cases the mesenteric ganglia are injured structurally, at times partially necrosed, and totally free from fat.—Even though death occur in a state of starvation, phagocytes for the resorption of fats are not to be found, while, on the contrary, they are extremely numerous in the ganglia of animals starved but not infected. The activity of the fat-modifying ferment is much lowered when compared with that of the axillary glands, studied at the same time and under the same conditions.

In the second group he has noted the lesions in adjacent ganglia in subcutaneous infections, both when such occurred in infants and when they were experimentally produced by the subcutaneous injection of pyogenic microbes. These peripheral ganglia under these circumstances have their fat-changing ferment reduced in comparison with that of the mesenteric ganglia.

Lastly, in cases of general infection, as diphtheria, all the ganglia are affected simultaneously, the fat-modifying activity of them all is diminished and they become less fitted for the transformation of the fat-laden lymph which passes through them.

These observations serve to explain several phenomena: Following infantile diarrhea, prolonged emaciation often occurs which lasts weeks or perhaps months, while the ganglia of the mesentery are recovering their functional activity. The same is true of all infections connected with the peritoneum and its ganglia, as typhoid, chronic peritonitis, tuberculosis and all cachectic diseases of the abdomen. On the other hand, cutaneous infections can persist for some time without seriously affecting the weight.

Now as to the liver becoming fatty in infections, most authorities hold that the fat of the hepatic cell is endogenous and not exogenous, that it results from a functional and pathological change in the cell protoplasm which makes fat rather than glycogen and the other normal products, which are now made in less quantity than normally. This explains both overloading of the cells with fat and fatty degeneration. In the former case, the cell is injured by a toxin of attenuated virulence, but the fatty hepatic cell retains physiologic properties to such an extent as not to become the cause of hepatic insufficiency even when the process is extended. This, however, appears soon enough when a great number of cells undergo granulo-fatty degeneration. The function of the cell is lowered in the former case and destroyed in the latter. Both of these conditions are to be distinguished from obesity. In obesity an excessive amount of fat is stored up in accustomed places but it remains distinct from the parenchymatous cells and only affects them secondarily.

Therefore, to sum up, the lymphatic glands and the lymphoid tissue play, by means of a fat-modifying ferment which they secrete, an important role in the absorption and resorption of fat. This role is particularly that of a regulator which opposes inanition when alimentation is insufficient and stores up fat when alimentation is superabundant. T.

Dormiol.

This is the name given to a substance which has lately received a good deal of attention as a hypnotic. It is produced under suitable conditions from amylene hydrate (dimethyl-ethyl-carbinol) and chloral, and from its chemical constitution may be called dimethyl-ethyl carbinol-chloral; this title, however, is so cumbrous that the adoption of the fancy title "dormiol" seems to be admissible. Dormiol is supplied in the form of a 50 per cent. aqueous solution, and also in capsules containing 7½ minims of the pure substance. The solution is a colorless liquid; when diluted with water its taste is not objectionable, and, as the maximum dose made up to an ounce with water forms a clear solution on shaking, this seems to be the best method of administration; the capsules have the advantage of portability, but when rapid action is desired an aqueous solution is to be preferred. Reports as to the action of the drug are to the effect that it is a good hypnotic, and, as usual, it is said that its use gives rise to no unpleasant after-effects, an assertion which must be accepted with caution; it is also said to be rapid in its action. The ordinary dose is 15 minims of the 50 per cent. solution, or one capsule.—*British M. Journal*, May 24, 1902.

ORIGINAL ARTICLES

ETIOLOGY AND PROPHYLAXIS OF EPILEPSY.

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EPILEPSY is understood to be primarily a functional disease of the gray cells of the cortex of the brain with later organic changes in the neuroglia, and when the latter have been once well established it is absolutely incurable.

The disturbance of said cortical cells causing the convulsions may be due to many causes, which may be conveniently divided into two—the immediately exciting causes and the permanent ones.

The exciting causes are numerous, among which may be mentioned peripheral nerve irritation as from teething, intestinal parasites, adherent prepuce or glans clitoris and defective digestive processes.

At the time of and immediately preceding the convulsion there is an excess of the etherial sulphates in the urine due to decomposition in the intestinal tract, which largely explains the fact that these patients do better when the digestive processes are carefully considered in their treatment.

In the cases that begin in infancy about three-fourths begin in the infantile convulsions associated with teething and are probably due to rachitic changes in the cranial bones.

The exanthemata, especially scarlatina, are not infrequently the exciting cause. In fact very slight irritation is sufficient to excite a convulsion in many cases after the convulsive habit is once established.

Roe reports a large series of cases due to nasal obstruction which were greatly benefitted by the removal of adenoids and enlarged turbinated bones. Cerebrospinal meningitis is very liable to leave meningeal changes which will ultimately lead to this disease. Fright has frequently been known to produce the first fit.

The principal permanent causes are, enumerated in the order of their probable frequency, heredity, rickets, lymphatic constitution, puberty and trauma to the brain.

Heredity.—Gowers says that fully two-thirds of the cases of epilepsy inherit this tendency from parents showing a nervous instability of some sort, such as suicide, hysteria, neurasthenia, insanity, general paralysis, or epilepsy; dissimilar heredity being more common than similar.

He might with propriety have included inebriety on the list.

Rowan says: "Heredity is the most important etiological factor of this disease, for as the poison of syphilis, the nervous debility of the alcoholic, the susceptibility of the tuberculous patient is transmitted to the offspring, so does the epileptic inherit the tendency to an irritability of the nervous system which many causes may excite, and which, when once excited, responds to the least stimulation in the crisis of epilepsy."

Recent investigation of the subject leads us to believe that a very much larger per cent. is due to the hereditary effects of alcohol than was formerly supposed to be the case.

Out of 140 cases of epilepsy recently treated at a Paris clinic, 90 had alcoholic parents.

In adults the first epileptic seizure usually follows a debauch.

Reynolds says that in about one-third of his cases there had been an hereditary tendency from some taint in family or near relative, but not more than 12 per cent. were from epilepsy in either branch of the family. I find from examining statistics in general there is quite a close agreement that epilepsy begets epilepsy in about 10 per cent. of the cases and insanity bears about the same relation.

In many instances in considering the hereditary influence epilepsy bears towards posterity other essential factors are lost sight of that often strongly predispose to the same disease.

As an example, a mother of a family is an epileptic, her eldest daughter is also a victim of this disease, her eldest son is weak mentally, another son suffers much from enuresis, while a younger girl has a poor moral sense. But the father is a drunkard and was soaked in alcohol at the time the children were propagated.

Family hereditary influence seems to be among cousins more than brothers and sisters, while consanguineous marriages predispose to this disease. Hereditary influence of syphilis must be taken into consideration. Jacoby says many cases can be traced back to inherited syphilis.

Persistent malnutrition of the infant in spite of proper food and hygiene is very suggestive of congenital syphilis even when no other sign is present. Some cases have no doubt had their origin in the malnutrition of the second stage of acquired syphilis (local endocranial disease comes later in the luetic history) and are usually due to chronic inflammation or meningeal growths.

Cases due to hereditary syphilis develop later than those due to alcoholism. In 1872 Parrot claimed that his observation demonstrated that rickets was usually due to congenital syphilis.

Dr. McNickoll, in analyzing 10,000 children, found that 880 were more or less mentally defective.

Forty per cent. of these were due to environment, 471 were children of drunkards, and 221 were due to heredity. He had been able to trace 463 children in 150 families through 3 generations; of that number 17 were precocious in some one thing, 403 were generally deficient, 17 had neurotic fathers, 78 neurotic mothers, 313 had drunken fathers, 51 drunken mothers, 43 neurotic grandparents, 265 had drinking grandparents, 246 drinking parents and grandparents.

While a study of 51 strictly temperate families with 231 children showed less than 3 per cent. dull and very few suffering from any neuropathy.

The notorious Juke family, which shows 800 criminals in 5 generations, is an example of heredity often quoted, and, at the same time, this family well illustrates what environment will do to improve degenerates, and also as well, how bad environment helps out and furthers the evil effects of vile hereditary taints.

Many more statistics might be referred to, but it will suffice to say that they quite uniformly agree that heredity is a most prominent cause of this disease, and that drunkenness stands in the front rank for evil here, as in almost all its relations, from both a medical and socialistic standpoint. The dwarfing influence of extreme poverty is a factor in heredity, more marked, however, in the larger cities of Europe than here.

It is claimed that when the mother is seriously sick with some acute disease during pregnancy that the child is especially liable to have this disease, a fact probably due to irregular or faulty development of nerve centers in the infant. No doubt if all human vices could be known the influence of heredity would be considered greater than at present, but the average citizen has enough mental acumen to keep his best side out and conceal all that is not calculated to accentuate his mental, moral and physical well-being.

Rickets.—The most recent clinical and post-mortem observations at institutions where every opportunity for such study was at hand, with competent observers to conduct such investigations, as at Gallipolis, in this State, show rickets to be the cause of this disease in a very large per cent. of the cases, with the lymphatic constitution as an accompanying dyscrasia in very many instances.

If this be true the etiology of epilepsy becomes very plain and its prophylaxis apparent.

Dr. A. P. Ohlmacher, after making most painstaking pathological investigations on quite a large number of cases says: "The problem of dealing with idiopathic epilepsy resolves itself into one of combating infantile rickers, which we are now led to consider a nutritive (or possibly nutritive and infective) disorder, preventible by proper dieting and hygienic precautions in infancy. In other words, the problem of handling idiopathic epilepsy resolves itself into one of prevention and not of cure, for I believe idiopathic epilepsy once established to the point of having produced changes in the neuroglia of the cerebum to be an absolutely incurable disease." He further says, quoting from Gowers: "Whether rickets is or is not entirely preventible, there can be but little doubt that its development to the degree in which it leads to convulsions may always be prevented by proper attention to diet and hygiene of infancy."

These facts therefore suggest that a considerable proportion of the cases of epilepsy are really within the range of preventible diseases. Ohlmacher further says, in his essay on "Epilepsy and Rickets": "Both from morphological and physiological (chemical) investigation we must learn to recognize in rickets a potent factor in the pathogenesis of idiopathic grand mal."

As Gowers has already said: "Recognizing the significant bearing of the rachitic dyscrasia in the neurosis, we are destined to make unusual progress in the direction of prevention if not cure of this malady." In concluding his essay he says: "But in this day of individual achievement who shall say that the revelation of these mysteries is far off? At least we may not remain idle and helpless even now, for we can profit by the splendid achievement of pediatrists in the direction of infant feeding and hygiene and thus impede the development of the rickety and lymphatic constitution with their attendant neuroses among which epilepsy take the very first place."

Lasegne regarded all epilepsies as due to cranial asymmetry or malformation, thus presaging later conclusions of this disease being so often due to rickets. In contradistinction to this as late as 1886 McLane Hamilton, in his article in "Pepper's System of Medicine," when discussing the etiology of epilepsy does not even mention rickets.

Bra announces that in 70 cases he has been able to find a parasite in blood before the epileptic seizure that was not present after the convulsion. He succeeded in isolating and cultivating it and it appeared as a coccus, diplococcus, or in chains.

I have not been able to find any conformation of these observations in the literature of the subject, but am inclined to the belief that there may be some connection in many cases between the infection of rickets and the etiology of the epileptic convulsions.

Lymphatic Constitution.—This is understood to be a general lymphatic hyperplasia, thickening of the aorta and sometimes hypertrophy of the heart, retarded development of the internal organs, persistent hyperplastic thymus and enlarged thyroid with neurotic tendencies.

The grand mal type of the disease is the most common in this diathesis. Children of this constitution take chloroform badly, and are especially liable to sudden death.

Dr. Ewing thinks many sudden deaths are due to this diathesis, those with hyperplasia of the aorta showing very little resistance. Personally, I believe the only cases of reflex convulsions that I have ever seen prove fatal have been in children of this type.

I have seen the statement made somewhere that in adults deaths during anesthesia are almost invariably in subjects of the lymphatic diathesis. That this constitution is associated with epilepsy no longer remains in doubt. Imperfect nourishment by improper diet to young children may have much to do with the pathology in this constitution.

The use of stimulating animal foods, such as beef-juice, for very young children, and scraped beef in those from one to one and one-half years of age, over prolonged periods of time, thereby rendering the urine excessively acid from the presence of deficiently oxidized material, and the use of cereals, and made-up vegetable and cereal foods, that the digestive ferments cannot handle, no doubt often are contributing causes; not to mention their direct effect in producing nervousness, incontinence, night terrors, convulsions, chorea and even epilepsy.

Puberty.—Three-fourths of the cases begin before the twentieth year, and 12 per cent. before the third year, and one-half between ten and twenty. Changes of puberty therefore are a most important factor. This would naturally be expected, for the mental faculties are being rapidly developed, association centers are obtaining their full maturity and are most sensitive and responsive to irritation or injury, and pathological nerve changes are more readily produced.

It is interesting to note that at this time the proportion of female to male is as 6 to 5, while before this time there is quite a marked preponderance of the latter.

Probably the greater trauma inflicted on the male during delivery accounts for their larger proportion in early life, while pressure of school work on the female at about the time certain functions are being established is a most important factor in this as well as in many other nervous disorders of the growing girl.

Injuries to the brain of course occur at all ages, but by far the most frequent occur at or immediately after birth.

Birth injuries by forceps, allowing the head to remain compressed in the bony pelvis for prolonged periods of time, extension of the neck in breech presentations thereby injuring the phrenic and recurrent laryngeal nerves, cyanosis immediately after delivery, any or all may lead to epilepsy. Of course prevention and not remedy is the question here. These injuries no doubt weaken the resisting power of the infant to infection through the nasopharynx or otherwise.

Kocher, in his experiments on guinea-pigs, found that light blows on the head would produce convulsions unless the skull had previously been opened, and reasons therefrom that increased intracranial pressure is the cause of the convulsions. Premature ossification of sutures and fontanelles no doubt acts in this way. Grand mal seems to result from slight injuries while severe trauma of the brain results most frequently in petit mal if epilepsy is developed at all.

Microcephalus is sometimes the cause and hydrocephalus leaves sequelæ that render the individual especially susceptible to the exciting causes of this malady.

Cases due to cranial asymmetry rarely begin after the eighteenth year. Infantile eclampsia, when repeated, seems to establish the convulsive habit, that not infrequently later on develops into true epilepsy.

In fact the child that has inherited an unstable nervous system may contract epilepsy from an injury that a normal child would pass through unscathed. In writing on this subject one is constantly reminded of the relation of epilepsy in the child to other defective mental conditions, and one is almost overwhelmed with pity and the desire to do something for their good. In the United States today there are 100,000 idiotic and feeble-minded children, and there are only 19 State institutions to care for them, so that the large majority must look for what education and training they have to the home and the public schools.

And in the latter they are constantly reminded of their deficiencies by the teachers and by their companions through taunts and otherwise. No one seeks for the dormant faculties to improve or tries to any great extent to nurture what capabilities they may have. The very associations by which they are surrounded serve to mask and retard their capabilities, they grow more reserved and timid, or, still worse, indifferent.

Noyes divides feeble-minded children into:—

1. Those in whom the faculty of perception is deficient, as the deaf and blind.
2. Those having special senses but lacking the power of attention.
3. Those showing defect or disease of will.
4. Those showing defect of reasoning power.
5. Those who are morally defective.

Epilepsy is most common in the last four divisions. Many of these children if subjected to proper medical examinations when the cureable defects were corrected would improve in a phenomenal manner. It is gratifying to note at the present time the tendency is toward a better hygiene in the management of infancy and childhood, especially along the line of nourishing the child, thereby establishing a better metabolism. This no doubt is doing much to prevent the development of rickets and kindred disorders of mal-assimilation, thereby preventing epilepsy.

Today there is a wonderful evolution in medical education and practice, and, among other things accomplished, we hope to see great and permanent changes in what concerns the fountain head of organic nervous diseases of children, namely, the marriage of feeble-minded, the insane, epileptics, criminals and drunkards. The medical profession should be a unit in educating the masses on this subject, and especial attention should be given to those legally qualified to solemnize marriage.

I am sure that the outlook is that the profession will meet the great hygienic problems which lead to the neuroses of children, of which epilepsy is only one factor, as well as all the other dyscrasias of childhood, fairly, strongly, and with a force of purpose that will in a large measure stamp out many things that cause so much mental, moral and physical obliquity.

I am sure that the increasing attention given to these problems by so many brainy medical men justifies this optimistic opinion.

1419 Broadway.

Pneumonia in Young Children

Can be diagnosticated from other diseases by the following sign: There is lack of expansion of the subclavicular region independent of the location of the pneumonia lesion. On placing the fingers upon the subclavicular region they are lifted as by a wave on the sound side, while on the other the lack of expansion is evident even in early stages of the disease. In pleurisy and pneumothorax the lack of expansion corresponds with the site of the lesion.—Weill, *Med. Record.*

THE PNEUMONIAS OF INFANCY.*

By F. L. Lapsley, A.B., M.D.,
Paris, Ky.

IN complying with the request of your committee to choose a subject for discussion at this meeting, it occurred to me that none could be more appropriate or of more practical interest than the pneumonias of infancy. What I shall have to say is concerned with catarrhal or lobular or, as it is often termed, and a term I much prefer, bronchial pneumonia. This I recognize as the most frequent type in children up to the age of five years, and is essentially the pneumonia of infancy.

Bronchial pneumonia describes a lesion rather than a disease, and its mortality is high because of the tender age of the patients in which the primary cases occur, and because when secondary it complicates the most severe forms of acute infectious diseases of childhood. Furthermore the term gives prominence to the bronchial element in the inflammation.

Allow me first to call your attention to some of the most prominent etiological factors in this disease. It most commonly results from a simple bronchitis, the inflammation first affecting the larger tubes, then extending by continuity of structure to the bronchioles and from them to the air cells in certain lobules. Hence the cause would evidently be the same as that producing the bronchitis which precedes and accompanies it. It is a most frequent complication of the acute infectious diseases, especially of whooping cough, measles and influenza, and more rarely of scarlet fever and smallpox.

In the tenement districts of our crowded cities special notice is made of the prevalence of this disease by those who are called to minister under such circumstances of misery, sickness and death. It is here we find the ill-nourished, the rachitic and anemic little ones, with little power of resistance produced by living in these small, overcrowed, overheated and dirty apartments. Frequently from such surroundings these infants are taken to the lower temperature of the streets or exposed to open windows.

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* Read before the Kentucky Midland Medical Society, at Paris, Ky., April 10, 1902.

During the past two months we have experienced in our community a general epidemic of measles — not German measles, or smallpox, or Cuban itch, or elephant itch, but the real thing, the genuine article of old-fashioned red measles. In many cases I have seen I have noticed a strong tendency to the development of bronchitis and into the next step bronchial pneumonia. In the majority of these cases timely and active therapeutic measures have resulted in forestalling such unpleasant complications; but I am none the less impressed with the tendency of such developments unless cases are prudently and timely managed in the course of this, one of the most contagious of all the eruptive diseases.

I would also call your attention to the pernicious habit of allowing infants, enfeebled it may be by chronic disease, who have weak action of the heart and perhaps languid circulation, to lie in their cribs or be nursed on pillows day after day, with little movement of the body. They are most liable to passive congestion of dependant portions of their lungs, which will eventually result in a pneumonia presenting some peculiarities of the bronchial form. Billard, a close and accurate observer, wrote many years ago calling attention to this stagnation of blood in the lungs as a potent etiological factor.

Bronchial pneumonia may sometimes result from atelectasis or collapse, and such cases are not only subacute but are usually protracted.

It is very necessary and of great importance, from both the point of view of the pathologist and the therapeutist, that a clear differentiation should be made by the general practitioner between that form of pneumonia in which the exudate is croupous or fibrinous and due to an infection by a specific microörganism, and that form not due to infection by a specific germ, but to any microörganism capable of producing inflammation about the bronchi. In the former we have a plastic exudate poured out into the vesicular portions of the lung, which readily undergoes resolution with the development of crisis. In the so-called bronchial form the primary pathological process consists chiefly in the inflammation of the tissues of the bronchial tubes, and it is by an extension of the process that sufficient of the lung is involved to cause the characteristic signs of consolidation. In one case a lobe is involved, in the other the process is more widespread and yet limited in the sense of being in patches, hence termed lobular or bronchial. In this latter form the tendency is not to speedy resolution with the development of a crisis, nor is it in its onset similar to the croupous form, which is always sudden and often attacks a lung apparently in perfect health. So bacteriologically and pathologically the two diseases involving pulmonary tissues can well be different in their clinical history, course and general manifestations; different in every way except that both give the physical sign of dulness on percussion over the area involved.

As regards the involvement of one or both lungs: In a series of autopsies by Holt, in 82 per cent. extensive disease was found in both lungs, and he further observed that the pathological process does not pass through a regular order of changes such as are seen in lobar pneumonia. Death may occur at any stage, or the pathological process may be arrested at any stage and resolution at once take place, thus making recovery rapid and complete.

Of the associated lesions of the lung, I would call your attention to one especially—involvement of the bronchial glands. In all recent acute cases these are swollen and red, the usual size being that of a small bean. In protracted cases and after repeated attacks they may become very much enlarged and in some cases they are large enough to give rise to symptoms, when they are apt to become the seat of tubercular deposits, of which character I have a case on hand at the present time.

The symptoms I picture to your mind are of the common type. The clinical aspect differs very much, but when the onset is sudden it is marked by high fever, frequently by vomiting, sometimes by convulsions, an illustration of which I saw last week. In addition we have rapid respiration (40 to 80 per minute), cough and active dilatation of the alæ nasi—all distinctly pulmonary symptoms. The temperature as a rule is high, but I wish to call your attention to its remittent character, the daily fluctuations amounting to as much as 4 or 5 degrees. It usually continues two or three, weeks then gradually subsides. It is very rare that it terminates by crisis, but I believe such cases do occur. The respiration seems more embarrassed than the action of the heart, the more frequent cause of death being respiratory failure. The pulse is always rapid, but its character is of much more importance than its rapidity. The prostration, moderate at first, gradually increases as the lung becomes more and more involved. The cough is constant and distressing, sometimes almost incessant. There is no expectoration but mucus is coughed up into the trachea or pharynx to be swallowed. I regard a strong cough a good symptom suppression of the cough being unfavorable as it indicates a lessened reflex sensibility of the bronchial mucous membrane. Pain in the chest is not common but may exist to a limited degree. Cyanosis, however slight, should be a danger signal, and the patient must be carefully watched and energetically treated. Gastroenteric symptoms are frequent on account of the accumulation of mucus and undigested food, the result of feeble digestion, which is always associated with a continued febrile process. The urine is scanty and high-colored.

Physical Signs.—Where we recognize a case of bronchial pneumonia existing without signs of consolidation we detect those signs due to congestion and associated with bronchitis. With areas of partial consolidation, on percussion we get slight dulness which in infants should always be elicited by very gentle percussion. On auscultation, fine and coarse moist râles are heard over quite a large area, usually near the spine over one of the lower lobes.

Prognosis.—Bronchial pneumonia is always to be regarded a serious disease and dangerous to life, according to the surroundings, previous condition of the patient, the nature of the infection, etc.

In concluding with the treatment I wish first to call your attention to the important part prophylaxis should play in giving early and careful attention to every attack of bronchitis in an infant, which is always a possible precursor of pneumonia. Adapt yourself and little patient to the surroundings as best you can by proper hygienic measures, which is most important, and nothing is more important for an infant sick with acute pulmonary disease than plenty of oxygen. Nurse them in their cribs, observing a frequent change of position in all cases. The general rules for feeding all sick children should be observed, giving all food they can well assimilate. Give small and frequently repeated doses of calomel, ipecac and soda to thoroughly arouse the secretions and clear out the alimentary canal also, an occasional dose of castor oil, and enemas of warm soapsuds to keep the bowels emptied of the large quantities of mucus and masses of undigested food.

Bearing in mind that the normal range of temperature is from 100° to 105° F., I wish most emphatically to deprecate the use of such drugs as phenacetine, antipyrine, or any of the anti's for the reduction of the temperature. When antipyretic measures are indicated in these cases of hyperpyrexia, the most certain, the most within our control, and hence the safest, is sponging, or even the warm bath. It is also my practice to give internally aconite properly graduated in solution. This is certainly one drug that I could not get along without, for I use it constantly in all forms of acute fevers from whatever cause. It is most efficient and uniform in strength, which I know from my experience in its use in patients from two weeks to seventy-five years of age, and never with the slightest unpleasant effect. The cough mixtures *adnauseam* do not play much of a role with me in the treatment of this affection. Apomorphia and emetine, in my hands, have proven to be by far the best expectorants, they seeming to be especially adapted to the respiratory affections of childhood, and I commend them to your consideration if you have not tried them.

Another step has to do with local applications. Dry heat is the ideal agent, it being a great improvement over the wet and irritating things that were formerly used. The cotton-batting jacket is the most practicable and admirably serves the purpose for which it is intended.

Of all plans of treatment the one that appeals to me as wholly irrational, injurious and detrimental to these little ones is the early use of alcoholic stimulants. I am persuaded they should occupy no place in our infant therapeutics. To commence the use of whiskey is only to increase the patient's discomfort, retard his recovery and counteract the good effect of drugs used. In the late stages of pneumonia I am fully aware of the importance and indication of stimulants and heart tonics, but how much better than whiskey are strychnia, digitalin, caffeine and nitroglycerine.

More particularly in the asthenic cases do I find that ammonia in some of its forms is effective and valuable. Then comes strychnia, our sheet-anchor.

How great the value of intestinal antisepsis none of us can measure.

If it should become necessary to resort to measures to procure rest and sleep, small doses of Dover's powder or codeine will be sufficient.

DISCUSSION.

Dr. W. C. Ussery, of Paris.—The paper is of especial interest to me, as we have just passed through an epidemic of measles, as stated by the essayist. I have recently seen seven cases of bronchopneumonia following measles. These cases have all recovered and I believe it has been due to the fact that they were treated along modern lines, by giving nature a chance to do something instead of subjecting them to the old-fashioned nauseous doses of ipecac, etc. I find that amorphous aconitine, given in solution to the child, and in granule form to older persons, will control fever better than any of the coal-tar products; instead of depressing the heart we get a stimulating effect; it will lower the tension and rapidity of the pulse. At the same time by the use of apomorphine and emetine in solution you get the proper effect upon the mucous membranes; you get the expectoration without the nausea attendent npon the enormous doses of the so-called cough mixtures; at the same time clear out the alimentary canal by small doses of calomel followed by some intestinal antiseptic, such as sulpho-carbolate of zinc or soda, accompanied by large quantities of pure cold water. By following this line of treatment pneumonia in the child has been so changed in its clinical manifestations that it appears like a new disease.

The essayist spoke of the proper hygienic management of these cases. I will add that frequent change of position of the child in bed is advisable. You will find that a baby becomes fretful if allowed to lie upon its back for hours at a time, therefore its position should be changed several times a day.

In regard to feeding: When a child has pneumonia, if he does not want anything to eat, let him alone. When he gets hungry, when the stomach is ready to assimilate food, his wants will be made known.

Dr. F. L. Lapsley, of Paris.—Of course I did not have sufficient time in the paper to go into details as to treatment. I felt that this would be brought out in the discussion. You will remember that two years ago I read a paper before this society on the subject of alkaloidal medication. Just what experience the members of the society have had with this method of treatment I do not know, but I must say that my experience with it has been eminently satisfactory both to myself and to my patients. I could not hope to secure better results from any other form of treatment, especially in acute infantile diseases.

I entertain no fears in leaving instructions with the family as to the administration of aconitine and other remedies of this class. I usually write down the instructions for the family; I believe this is advisable in many cases.

The high temperature of pneumonia in a child can be reduced quickly and maintained by the judicious administration of aconitine, and it may be given as often as necessary to produce this result without any danger. It will not produce cyanosis or depression, and I have never seen any unfavorable effect from its administration.

As regards the use of apomorphine: It may be given in moderate doses until the exudate becomes loosened and expectoration is free. I am not in position to say that with these remedies I can abort pneumonia, but I had a case of bronchopneumonia recently in which all the symptoms subsided within twenty-four hours under the plan of treatment that has been outlined.

In almost all cases of pneumonia in children some form of opiate is desirable, because you have a congested lung which is more or less painful, especially when the child coughs. You will find that every time the child coughs he will begin to cry. I have been in the habit of adding to the glass of water, containing the aconitine, an anodyne, one granule of codeine—1-67 of a grain to the teaspoonful. This will keep the child quiet and you will have no unpleasant effect from it.

The State Manufacture of Antitoxin in Massachusetts to be Discontinued.

On account of the failure of the Massachusetts Legislature to provide funds for the continuation of the manufacture of antitoxin by the State Board of Health it is possible that it may be necessary for the board to discontinue the work. At a recent meeting the president of the board, Dr. Henry P. Walcott, intimated that he might himself assume the expenses involved in the continuance of the work.—*N. Y. Med. Jour.*

SOCIETY REPORTS

THE SOCIETY FOR THE STUDY OF DISEASE IN CHILDREN.

A meeting of the Society was held on May 16, 1902, at the North Eastern Hospital, London, N.E.

Dr. W. A. Wills, Senior Physician to the Hospital, being in the Chair.

Dr. C. O. Hawthorne read a note on a case of **arthritis accompanying ophthalmia neonatorum.** After referring to the original observation of the association of the two conditions made by Mr. R. Clement Lucas in 1885 and to subsequent experiences in confirmation of this, a case was described in which the affection of the eyes commenced two days after birth and an abundant purulent discharge continued for fully three weeks. When the child was a fortnight old the right shoulder-joint became considerably, and the right wrist slightly, swollen without apparently causing much discomfort, and the swelling subsided in the course of a fortnight without any very active treatment. When the child came under observation again he was 6 weeks old. There was still a slight amount of muco-purulent discharge from the conjunctiva and the right cornea presented a slight abrasion from which a diffuse haze spread through the corneal substance. Possibly in this was to be found the explanation of a further outbreak of joint inflammation. For while the joints which were attacked at first—the right shoulder and wrist—had completely regained their normal characters, the left elbow-joint was much enlarged and the swelling extended down the radial side of the forearm for a considerable distance, giving here a sensation of deep fluctuation, as though the sheaths of the muscles were involved. The skin was not reddened, and though the child objected to manipulation of the joint he appeared otherwise to be free from pain, and the general nutrition was entirely satisfactory. It was decided to fix the limb and to continue the local treatment of the ophthalmia, and under these measures the patient made a rapid recovery, so that in from two to three weeks the elbow joint and forearm had regained in every respect their normal characters.

Mr. R. Clement Lucas said it was pleasant to know that a clinical observation, made almost in the prebacteriological days, had been so amply confirmed. His first case was so acute that it appeared as if it must suppurate, but it did not as a matter of fact. He had almost met with the subacute form, as described by Dr. Hawthorne. The peculiarities of the affection were the tendency to recover without suppuration and the association of suppuration in the conjunctiva.

Mr. Sydney Stephenson remarked that it was a pity that gonococci had not been demonstrated in the eye discharges from Dr. Hawthorne's patient, but the other circumstances of the case rendered the existence of gonorrhea quite conclusive. He had personally seen five instances of what might be properly termed "Lucas's joint disease," and of these, four made a perfect recovery under simple treatment. In the fifth case the joint was aspirated and ultimately became ankylosed.

Dr. Hawthorne, in reply, admitted that the discharge from the eye should have been examined for gonococci; but there could have been no reasonable doubt as to the diagnosis.

Dr. JAMES TAYLOR showed two cases (1) a case of **paroxysmal hemoglobinuria** in a child who had suffered from syphilitic ulceration of the palate; (2) a case of **Raynaud's disease** in a boy who had lost the terminal phalanges of several fingers. Oxalates were present in abundance in the tissue.

Mr. HERBERT CARRE-SMITH showed a case of **spastic cretinism** that had been under treatment for four years with thyroid extract. The physical and mental condition had greatly improved, but relapsed as soon as the treatment was discontinued.

Dr. G. A. Shuttleworth thought that it was never too late to use thyroid extract, and recommended perseverance in the treatment.

Dr. Edmund Cautley inquired whether the thyroid gland altered when treatment was stopped.

The Chairman remarked upon the large doses of thyroid that could be taken by such children.

Mr. Carre-Smith, in reply, said the thyroid gland had shown no very obvious changes, at all events since the case had been under his immediate observation during the last three years.

Mr. A. BUNCE ROXBURGH exhibited a child with a **fatty growth** occupying the left side of the perineum and scrotum. The testicles lay in the perineum and a hydrocele of the tunica vaginalis was present. The enlargement was noticed a few months after birth.

Mr. Roxburgh also showed a girl, aged 5 years, presenting varicosity of the veins of the left lower extremity, with a large nævus of the cavernous type on the outer side of the knee. A radiogram showed slight alterations in the length and shape of the corresponding tibia.

Dr. Parker Weber remarked that the presence of tumor formation in this case gave one the explanation of the resemblance between nævoid tumor-formation and varicose veins.

Mr. R. Clement Lucas advised that the tumors, and if necessary, a large amount of the cellular tissue should be excised.

Dr. J. Porter Parkinson showed two instances in the same family of a curious **congenital depression of the frontal and parietal bones** on one side of the cranium. The children, aged respectively two and three-twelfth and eleven months, seemed intelligent, and had never suffered from fits. There existed no other signs of mal-development.

Dr. E. W. Clapham alluded to a similar case shown by him to Clinical Society last year.

Dr. J. Pate Parkinson showed also an **organized intracardiac thrombus** obtained from a boy of 8 years.

Mr. Douglas Drew showed several cases illustrating the treatment of secondary conditions occurring after operations for **tuberculous joints**. He also exhibited a specimen and sections of an **adeno-myxo-sarcoma of the testis** taken from an infant.

Mr. Sydney Stephenson showed a case of **keratomalacia** in an emaciated infant of 7 months suffering from tuberculosis, probably of the disseminated variety. The disease had already led to complete destruction of one eye. In the remaining eye the corneal ulceration had healed with the production of a nebula.

Dr. Edmund Cautley remarked that the temperature chart was not like that of tuberculosis. He asked whether the gonococcus could be excluded as a factor in the case.

Mr. Stephenson, in reply, said there had been no ophthalmia neonatorum. The symptoms did not begin until the third month and were those of keratitis and not of conjunctivitis. The latter, indeed, had been absent throughout the case. Clinically, at all events, the gonococcus could therefore be put aside.

Mr. Walter Edmunds exhibited a girl, 11 years of age, suffering from **subluxation of the left shoulder joint**. This he regarded as one of the after-effects of epiphysitis, with which she was affected as a baby. The arm could be freely moved in any direction except upwards.

Mr. Clement Lucas alluded to a similar case that had been under his care.

Mr. E. W. Clephan mentioned another case of the same kind seen in a healthy man examined for life insurance.

Mr. H. BETHAM ROBINSON showed an example of **Springel's deformity** of one shoulder, in a girl aged 11 years. It had been noticed for two months only.

Dr. Travers Smith alluded to a case shown by him last year at the Polyclinic. Springel's theory was that in utero the arm got behind the back or the shoulder was raised, thus bringing about the deformity.

Dr. Hawthorne enquired whether in this case a bony process passed from the spinal colum to the upper part of the scapula.

Mr. Robinson, in reply, said that no such osseous process existed in his patient.

Dr. JAMES H. SEQUEIRA exhibited a large **sarcomatous tumor of the left suprarenal body**, from a girl aged 11 years, who exhibited the phenomena of "precocious puberty." The patient had menstruated for 15 months, the mammæ were very large, and there was a large growth of hair on the pubes, chin and lip. Secondary deposits were present in the lungs and liver.

Mr. R. Clement Lucas, Dr. Parker Weber, Mr. H. B. Robinson, Dr. George Carpenter and the Chairman discussed the specimen.

A Vaccinator Held for Vaccinating a Child.

Dr. Edward R. Bedford has been held before the Court of Special Sessions on a technical charge of assault by a police magistrate in Brooklyn, being released on his own recognizance. Willis J. Walsh, a contractor, of 397 Hancock street, the father of the girl, who is six years old, was opposed to her being vaccinated by Board of Health officers. He tried to get a certificate from the family physician, who had vaccinated the girl some time before. The certificate had not been received, however, on May 7th, the day set by Wm. McAndrew, the principal of the school, and Dr. Bedford, for the Board of Health, vaccinated the girl. Mr. Walsh then had both Mr. McAndrew and the doctor arrested. On the examination the principal was discharged and the decision in the doctor's case reserved and the doctor eventually held to appear before the Court of Special Sessions.—*N. Y. Med. Jour.*

BOOK REVIEWS

Ante-natal Pathology and Hygiene; the Fœtus.—By J. W. Ballantyne, M.D., F.R.C.P., F.R.S. Edin. Edinburgh: William Green & Sons. 1902.

Dr. Ballantyne, in Section I of his recent work, has placed at the service of the profession the results of his exhaustive research into ancient and contemporary medical literature, coupled with his own laborious investigations, respecting ante-natal pathology. Whether viewed from the standpoint of its scientific or literary excellence this volume bids fair to become a standard classical authority on this subject.

The volume before us teems with facts and problems of the deepest significance and widest interest and a short review can do but scant justice to it; but attention may be directed to its salient features, as an incentive to a careful study of the work, which will well repay perusal.

The first six chapters are devoted to a consideration of ante-natal in relation to neo-natal and post-natal pathology. Upon this basis a key is afforded to the elucidation of many of the difficulties which beset the due comprehension of disease in the new-born, and further, many of the relationships which appear between ante-natal, neo-natal and post-natal existence are scientifically correlated and explained.

The literature of the subject which has been placed under consideration, ranges as far back as the "Teratological Records of Chaldea"; as regards the works of Aristotle, the author considers these "have not been equalled till the writings of St. Hilaire in the nineteenth century;" although he ascribes to Düttel in 1702 the credit of writing "the first separate work treating of fetal diseases, as distinguished from monstrosities." In order to the better understanding of these six preliminary chapters, the reader will do well to study, first, the scheme of ante-natal life, which illustrates the progress onwards of the various periods of the germinal life, from its origin in the germinal period to its termination in the post-natal period.

The remaining twenty-six chapters, arranged on a carefully thought out and scientific plan, commence with the consideration of the pathology and hygiene, as well as the anatomy and physiology of the fetus. In Chapter IX the author seeks to place the data respecting the latter on a firmer scientific platform, based upon observations made upon the circulation and respiration in the fetus, whether human or animal.

Chapter XI contains an important contribution to fetal pathology, separating as it does, "diseases, as distinguished from embryonic pathology, which has malformations and monstrosities as its peculiar possession."

The chapter devoted to Fetal Tuberculosis will be found especially interesting at the present time; evidence of its existence is based on the first reliable case, reported by Charrin in 1873, which was convincing, clinically and pathologically, "as it could be in the absence of modern bacteriological tests," further evidence being afforded by Auché and Chambrelent in 1899, and five or six other cases, considered rare by those who reported them. Coupled with the above, attention is drawn to the masterly exposition of ante-natal tuberculosis, by G. Kuss (1898) who considers "well established cases in the fetal calf" of tuberculosis "almost as uncommon as in the human subject."

The author refers to a third type of congenital tuberculosis, "in which although evident tubercular lesions were not met with, yet the bacilli were found in the fetal tissues" and blood, and subsequent inoculation of animals therewith, led to the development of tubercle in them.

Transmitted fetal diseases find their typical illustration in Fetal Syphilis, while no less than six chapters are devoted to the Idiopathic Diseases of the Fetus, exhaustively considered and arranged, according to a wide range of type.

Two of the most instructive and important chapters close the volume, which must be carefully read to be adequately appreciated; one devoted to the Therapeutics of Fetal Disease; the last, to the Hygiene and Therapeutics of Fetal Life. In these concluding remarks the earlier chapters receive a logical exposition which enhances their scientific value and practical interest.

A special feature in the work is the conscientious regularity with which the author at once records and acknowledges the various collateral sources whence he has derived his information in confirmation of views expressed.

Considerable merit is due to the publishers for the high excellence exhibited in their production of the work, as regards the letterpress, as well as the colored plates and wood cuts which illustrate the text.

All interested in the subject will anticipate both pleasure and profit from the publication of Section II of this work, which is to deal with Teratology and Morbid Heredity.

H. Cripps Lawrence, M. D.

Purgatin and Triferrin.

Purgatin (anthrapurpurin acetate) is a synthetic preparation with a similar constitution to some of the active constituents of such well-known drugs as cascara sagrada, senna, etc. Thus, being an oxyanthra-quinone derivative, it is closely related to emodin or trioxy-methyl-anthraquinone, and to chrysophanic acid or di-oxymethyl-anthraquinone. We must say that we deprecate its title, which savors of the "patent-medicine" type. Purgatin is a yellow micro-crystalline powder which is soluble in most organic liquids but insoluble in water; it is tasteless, and therefore best prescribed in the form of powders. In small doses (7½ to 15 gr.) it is said to act as a mild laxative, and in large doses (30 gr. or more) as a drastic purgative. It is claimed to be particularly efficacious in the habitual chronic constipation of persons suffering from neurasthenia, hypochondria and hemorrhoids. Patients taking it pass anthrapurpurin in the urine, which is consequently colored red.

Triferrin (paranucleinate of iron) contains 22 per cent. of iron and 2½ per cent. of phosphorus in organic combination. It is a brown powder practically insoluble in water, and may be conveniently prescribed in powders or cachets. It is said to be useful in anemia, chlorosis, etc., and to be very easily tolerated; the hemoglobin content of the blood is said to be raised under its use and the quantity of iron in the liver trebled. The usual dose is 5 gr. three times daily.—*British Medical Journal*, May 24, 1902.

ABSTRACTS

TWO CASES OF PARTIAL INTERNAL HYDROCEPHALUS FROM CLOSURE OF THE INTERVENTRICULAR PASSAGES.

W.G. Spiller (*Amer. Jour. Med. Sciences*, July, 1902) says: Internal hydrocephalus is not a very uncommon finding at necropsy, but the cause of the increase in the amount of the cerebrospinal fluid within the ventricles has often eluded detection.

Two cases that have come under his observation and have been studied by means of microscopical sections have shown that the hydrocephalus was the result of closure of the interventricular passages, each case being one of partial dilatation of the ventricular cavity.

Partial internal hydrocephalus is more uncommon than is the form of the disease in which all the ventricles of the brain are implicated, and affords a better opportunity for determining the location of the primary lesion.

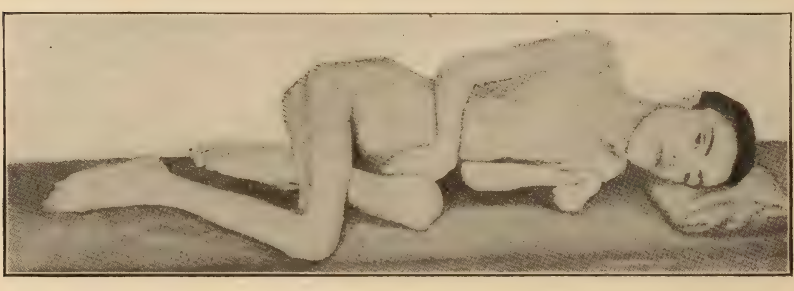


Fig. 1. Unilateral internal hydrocephalus, causing bilateral contracture. Photograph taken after death. (Case 1.)

Summary. Case 1.—The patient, a boy, was 14 years and 8 months old at the time of death. Little is known of his history, as he had come from an almshouse. Four years before death he had been able to walk with difficulty and to ascend stairs, but he gradually lost this power and became bedridden. Contractures were very pronounced in the left limbs, and also, but to a less extent, in the right lower limb and fingers of the right hand. The right cerebral ventricle was intensely dilated, so that the ventricular wall in some places was very thin, the occipital lobe at parts being only ⅛ inch thick. The right internal hydrocephalus was the result of partial closure of the right foramen of Monro from inflammatory changes about this foramen, and the condition must have been congenital or have developed early in life, as shown especially by the arrest of development of the left upper limb. The cause of these inflammatory changes and proliferation of neuroglia at the foramen of Monro is unknown, but it may possibly have been the result of tuberculosis, as a condition of some of the viscera suggestive of tuberculosis was found. Anglade has described neurogliar proliferation in the walls of the ventricles, occurring in cases of general tuberculosis, and produced by the toxin of the tubercle bacillus. This neurogliar proliferation resembles very closely that found in cases of cerebral syphilis or paretic dementia. These ependymal nodules do not contain bacilli. Probably there are many causes for neurogliar proliferation of the ventricles.

Notwithstanding the very intense muscular atrophy in this case the cell bodies of the anterior horns of the lumbar and cervical regions appeared to be normal. This finding is important and shows the difficulty of explaining muscular atrophy in hemiplegia as a result of tertiary degeneration, *i.e.*, a degeneration of the cell-bodies of the anterior horns of the spinal cord resulting from the degeneration of the pyramidal tract.

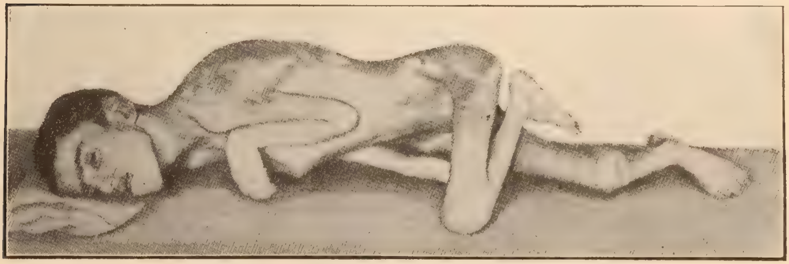


FIG. 2. Unilateral internal hydrocephalus, causing bilateral contracture. Photograph taken after death. (Case 1.)

Case 2.—Summary: The patient, a boy, aged 19 years at the time of death, had some headache once or twice a week, with vomiting, since his childhood; but about six months before death the headaches became severe, and cerebellar gait was observed. Dizziness was also experienced especially when the patient laid on his back. This dizziness was probably the result of pressure of the distended cerebral ventricles on the cerebellum. Slight exophthalmos was observed. Distinct optic neuritis was present in each eye. The knee-jerks were exaggerated. Death occurred suddenly.

The skull was very thin, hardly thicker than a sheet of paper at the sides of the calvarium. The cerebral ventricles were much distended, but the fourth ventricle was of normal size. The aqueduct of Sylvius was entirely occluded when examined by the naked eye, but in microscopical sections a very small opening was found, which may have been absent during life. It is questionable whether any fluid passed through this opening during life. Small groups of ependymal cells were seen in several places, and these had evidently been separated from the ependymal lining by the proliferation of the neuroglia.

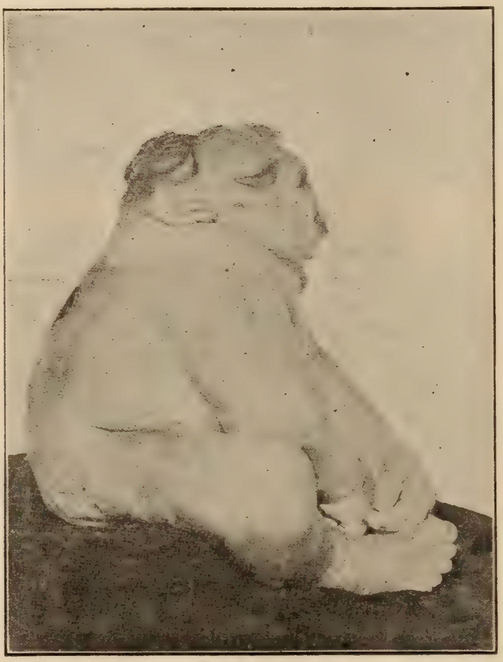
MATERNAL IMPRESSION "MARKS" CHILD FOR A FROG.

Dr. J. W. Coolidge, in the *Journal of the A. M. A.*, relates the following:

Mrs. R., aged 31, of good intellectual ability, and not superstitious. gave birth, March 13, 1902, to a stillborn, seven months' child.

Fetal movements were noticeable the previous evening, and death seemed to have been due to a long second stage, it being three and a half hours in length.

The child having no neck, the head was almost immovable on the shoulders, so much so that it was a left brow presentation, the left shoulder following immediately,and so rigid were these parts that the maternal coccyx was strained backward sufficiently to cause extreme pain for a few days.

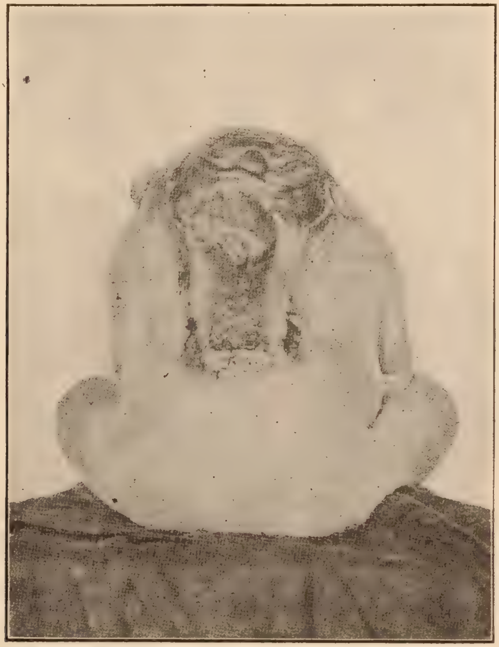


The child's eyes protrude far beyond the brows, and there appears to be no brain cavity, except two little sacs on the back of the head, with a smaller one between and posterior (cerebellum).

There are two parallel lines of bony prominences extending from the back of the head downward as far as the last dorsal vertebra, separated by a space a little more than an inch wide, over which there is no skin, leaving the flesh like a fresh wound. The bony prominences are bordered by a thin osseous scale, and this for the upper two-thirds by a narrow line of fine hair. The body and extremities are otherwise normal.

Mrs. R. has one child four years old and has had one abortion. She is not easily frightened, and at first could remember nothing to account for the deformities. Later she remembered carrying out a frog the cat had killed and brought into the house at about the third month of her pregnancy.

The gross appearance of the child's back is that of the back of an injured frog when he elevates the flat surface extending backward from the head.



The editor of the *Journal of the A. M. A.* comments as follows on the case:

"The case described above is a form of monster belonging to the group of exencephalus. The deformities in these monsters, as well as in anecephali and in the cases of spina bifida, are started by a failure of the posterior vetebral plates to close over the neural canal in early embryonic development. This deformity, cranio-rachischisis, may be due to an excessive formation of cerebrospinal fluid or to something that interferes with the union of the posterior lamina, e.g., adhesions of amnion to the edges of the medullary groove.

The belief that an idea of the mother during pregnancy can have any influence on the causation of such a deformity has no support from any scientific observation and is almost incredible. The mother has no connection with the child in utero except through the blood supply. There is no nervous connection, and even if there were it is difficult to imagine how the amniotic adhesions could be produced by an idea or mental condition of the mother.

This matter is of considerable importance because of the widespread belief in the efficacy of maternal impressions in producing deformities and "mother marks.' This belief among mothers leads to much useless and harmful anxiety during pregnancy, for all women are liable to see unusual sights that may frighten or disgust them. Moreover, if a deformed child is born the mother is very apt to blame herself or some other innocent party for the assumed causation of the trouble. A physician, therefore, instead of searching out some forgotten incident that by the exercise of a lively imagination can be made responsible for the deformity, should rather seek to aid his patients to remove their fears and superstitions.

EAR COMPLICATIONS OF MEASLES AND THEIR TREATMENT.

H. Jarecky (*Med. Rec.*, July 19, 1902), makes the following observations: The ear complications of measles are usually light, and progress to recovery, but a certain number leave serious defects.

In considering the etiology there is no doubt that the mucous membrane of the auditory apparatus partakes of the general catarrhal condition and eruption of the exanthem. So also does the general poisoning of the disease affect the organs of hearing.

The suppurative condition is due to a mixed infection, which is easily propagated in a system weakened by disease.

The streptococci and the pneumococci are found to do the most mischief. Bacteriological diagnosis will undoubtedly be the guide in the near future, as to prognoses and to operative procedures.

Other cases are due to extension from the post-nasal space through the Eustachian tubes, and principally found where the vault of the pharynx is occupied by hypertrophied lymphoid tissue.

The acute otitis media, either catarrhal or purulent, may occur at any time during the disease, but generally while fever is present.

It may be either unilateral or bilateral. Although both ears may be affected simultaneously, one may heal more rapidly than the other.

The catarrhal form usually occurs with light attacks, although the reverse may be the case. The discharge is usually turbid from the presence of epithelial cells, and rather viscid from the mixture of mucus. The purulent is generally associated with severe cases, and often results in destruction of the ossicles and tympanic walls.

In infants and children who cannot direct attention to the spot whence the trouble arises, any increase in temperature, fretfulness, restlessness, burying the head in the pillow, or putting the hand to the ear, should call attention to that organ. Very often a discharge is the first sign of the trouble.

In purulent cases the pain is usually more intense, being often excruciating in character. The temperature is as a rule high, rising to 103° F. and sometimes higher, pulse rapid. There may be vertigo, tinnitus, headache, constipation and anorexia.

He has found in children, even where free drainage exists, a recurrence of temperature for a few days.

In severe cases the inflammation often extends to the mastoid, filling the antrum with pus and causing considerable bone destruction from the acute caries. The temperature in these cases usually shows some increase. The pain may be of marked severity or of a light character. The discharge diminishes in quantity. Facial paralysis may occur. There is tenderness usually on pressure over the antrum, that is, at the attachment of the auricle close to the superior wall of the canal. Sometimes this is most marked over the mastoid tip. If there is a perforation of the mastoid cortex, there will be fluctuation over the bone. In infants the pus often escapes through the Rivinian segment, having made its way along the superior wall of the canal and there is a postauricular swelling, making the ear project out more prominently. There is invariably present a marked swelling of the superior posterior canal wall. A perforation may take place on the internal surface of the mastoid when a brawny swelling will extend along the sterno-cleido-mastoid. If the pus passes to the cerebrum or cerebellum the following are the symptoms: Pain in the head, drowsiness, or violent delirium, disordered speech, convulsions, optic neuritis, vomiting, constipation, pareses of various kinds. These are due to an extra-dural abscess, leptomeningitis, abscess of the temporosphenoidal lobe or one of the cerebellum. When one of the large sinuses of the dura mater is involved, symptoms of pyemia occur. Labyrinthian complication, without much effect on drum membrane, presents more or less pain, dizziness, nausea, troublesome tinnitus and hearing power impaired or lost on one or both sides. Fortunately this is of an extremely rare occurrence.

The examination of the drum membrane in the otitis media conditions will show more or less congestion. One must not be deceived if the membrane is of a dead white color. This is sometimes due to necrosis of the superficial epithelium, which can be easily removed by a cotton-tipped probe, when the reddened membrane can be seen.

For pain in adults relief is often found by abstraction of blood, applying natural or artificial leeches over the tragus. A hypodermic injection of morphine will often cut short an attack. Occasionally I have had results from phenacetine, 5 to 10 grains, or acetanilid, 2 to 4 grains, every two or three hours. The local watery solution of morphine, cocaine and atropine has never been satisfactory. Oils are only mentioned to be condemned. Glycerine, with 5 to 10 per cent. of carbolic acid, applied on cotton to the drum membrane and allowed to remain from six to twenty-four hours, often cures the pain. This can be repeated if necessary. Dry heat is very effective at times. Moist heat causes edema of the tissues and should not be used. Frequent irrigation with hot water from a fountain syringe, placed about 1 foot over the head, using a half to one pint of water, is very efficacious. The nose should be kept clear by irrigation or swabbing and a gargle used to dispel any mucus from the throat. The bowels should be carefully looked after.

If the attack is not aborted the hyperemia increases and the membrane loses its luster, causing a general swelling and bulging.

This should not be allowed to perforate spontaneously, as the rupture is jagged, and causes irregular cicatrices and takes a much longer time in healing than when incised and the prognosis as to the future hearing is worse. Only in extremely few cases do we see good results.

When bulging exists paracentesis should be at once performed. For this operation the canal should be cleansed, either irrigated with bichloride solution 1 to 5,000, or else mopped out with the peroxide of hydrogen.

Then with a good light the knife should pass through the bulging portion, or from the point behind or below the stapes to the lower border of the membrane close to its bony attachment, by a curved incision, that is the posterior inferior segment. The knife he prefers is a straight one, but one at an angle may be used. It must be exceedingly sharp and pass through the membrane by its own weight, incising at the same time the mucous membrane of the internal tympanic walls to secure thorough depletion. If the membrane has ruptured spontaneously the opening should be inspected to see that there is sufficient drainage, if not, a free incision, should be made.

In adults he invariably used nitrous oxide, and in children chloroform or ether. Infants can be held firmly and operated upon.

After the operation he irrigates, packs the canal lightly with sterilized gauze, puts a pad of cotton over the ear and retains all with a bandage, which he leaves undisturbed for twenty-four hours, directing the patient to lie on the side affected to facilitate drainage. If there is much discharge at the time of incision he orders douching.

When the gauze is removed he irrigates, according to the amount of discharge. Some cases heal up in a few days.

The discharge, which is usually at first serous, later often becomes purulent and profuse. The cleansing may be needed every two or three hours. Saturated solution of boric acid, bichloride 1 to 5,000 or 10,000, or sterilized water, may be used. As the discharge diminishes the cleansing should be reduced in frequency.

ROETHELN (RUBELLA OR GERMAN MEASLES).

R. W. Marsden, M.D. (*Med. Chron.*, May, 1902) in an exhaustive article on this subject concludes as follows:

The diagnosis is to be made upon a mild infectious disease, with a long incubation period, extending usually to two weeks or more, without sudden onset, the rash being often the first indication of illness. Occasionally the patient may previously complain of stiffness in the neck behind the sterno-mastoid (Tonge-Smith) or general malaise, or have one or more attacks of sneezing (Ker). The rash appears as discrete pink spots (generally slightly raised, of variable size and less punctate than in scarlet fever), most frequently on the face, including the circumoral ring, and spreads over the rest of the body. At its full development the spots often coalesce in certain areas. It does not, as a rule, last longer than four days, and is not seen fully developed over the body at any stage, but is fading or faded in the area of its origin before full development is attained in the area last to be attacked. At the same time there is slight conjunctivitis, slight sore throat, or dryness of the throat, with some congestion (though occasionally no evident change), and very rarely ulceration. The glands in the posterior cervical triangle are also frequently enlarged, shotty and somewhat tender. The associated pyrexia is very slight and somewhat evanescent, and the patients seldom seem ill.

Strahan, in an article on the diagnosis of roseola, though drawing attention to the absence of special prodromes, or marked sore throat and catarrhal symptoms, as well as the want of any association between pyrexia and the proportion of the rash, or the definite appearance of the latter as regards time or locality, states that "roseola is often preceded by sore throat, but catarrhal symptoms are so common in children that they often coincide with an attack of roseola, so that the latter often closely imitates, or, still more, roetheln." He further adds that roseola may precede the true rash in many diseases. In these cases, however, the special symptoms of invasion, their severity, the degree of pyrexia, or the association with an epidemic will aid in excluding the diagnosis of a combined or superadded infection.

Prophylaxis.—It is customary to isolate for three weeks those who have been exposed to infection, and for a like period those suffering from the disease. In Dr. Duke's experience, if disinfection be practiced persistence of desquamation after this period does not necessitate further isolation. I think such a period for isolation certainly errs on the side of liberality, and, while drawing attention to the fact that in practically all cases there is no risk of conveying contagion during the twelve days succeeding exposure, I would also again express my opinion that not only is the disease most infectious in the beginning, but that the infectiousness seems to disappear very rapidly.

Special treatment in the majority of cases is quite unnecessary. Demulcent drinks for the soreness or dryness of the throat and symptomatic treatment of any of the occasional complications is all that is called for. In the severe cases recorded as occurring in institutions attention is to be devoted apparently to the tendency to pneumonia, enteritis, etc., but such attacks have not come under my care.

THE DIAGNOSIS OF DIPHTHERIA.

Wm. V. Hazeltine (*Penna. Med. Jour.*, July, 1902), writes as follows. There is a pretty unanimous agreement as to the correctness of the statement that "diphtheria is an acute infectious disease due to the presence of a specific microörganism, (the Klebs-Loeffler bacillus."

Of the cases which are represented by a bacillus that is "difficult of distinction from the general organism of diphtheria since in its method of growth, the formation of its colonies and its microscopical appearance it is absolutely identical with the Klebs-Loeffler." Lennox Browne says,"the only method of distinguishing this 'pseudo-diphtheria bacillus' from that of the veritable Klebs-Loeffler organism is by an experimental observation of its non-toxic effect when introduced into the bodies of rabbits or guinea-pigs. That is to say, that although so similar in form, and responsible even for the production of a membranous inflammation of the throat, it is *non-virulent* in the sense that it is incapable of producing toxemia, either in the person of the individual in whom it is found, or by inoculation of lower animals."

This organism Browne believes to be the most frequent form of pseudo-bacillus found and also that it represents not a different microbe, but simply a true Klebs-Loeffler organism of exhausted toxicity. Kanthack says, bacilli do occur in healthy and non-diphtheritic sore throats, which closely resemble the Klebs-Loeffler organism, but yet are not entitled to this name. These have been named "pseudo-diphtheria bacilli," a name which "apparently includes several varieties and species and must be used with caution."

Corbett and Phillips also state that "the microscope will not help us to distinguish between these two organisms, and indeed they differ only in virulence."

There are other microörganisms which more or less resemble the specific bacillus of diphtheria but which we cannot stop to consider further than to state that as they are "different in culture, morphology and pathogenesis. both to man and to animals" no difficulty rises in differentiation. But while this is true, the association of some of these organisms, particularly the streptococci, is "responsible for some infectious complications often of a most malignant character." With reference to some of these questions there is a want of unanimity in the profession. Indeed there are not wanting good authorities who insist that a coccal infection generally precedes that of the specific bacillus or that "diphtheria is the result of a mixed infection." However,these views are not accepted by many and perhaps the following statement is expressive of the belief of the majority, namely, "that the proportion of these cases of membranous sore throat of high grade occurring in the fauces which are not diphtherial (bacteriologically) does not exceed from 10 to 15 per cent. of the whole number of cases recorded."

We need to use more care in our investigation of any throat affection, that thoroughness of examination and a careful consideration of all the factors concerned may enable us to reach a probable diagnosis, while we await the results of a bacteriological test. Of course a pseudo-membranous formation is the striking objective sign and we should study with care the various forms and characteristics of the membrane in bacillary diphtheria.

The firmly adherent fibrinous exudation of true diphtheria, a deposit which when removed by force leaves a raw and bleeding surface and which rapidly reforms, cannot readily be mistaken for any other anginose affection. Another diagnostic feature is that the early temperature range is lower,and this recurs so uniformly that a high temperature in the early period of a membranous throat affection is a strong indication that the case is not diphtheria. The grade of inflammatory action present in cases of bacillary diphtheria is lower than that seen in throats affected by scarlet fever or measles.

Lennox Browne states that "a point worthy of note is, that unmixed diphtherial throats are almost always dry throats, as likewise are the cultivations of the diphtheria bacillus on blood serum." Many other points in the clinical diagnosis of this disease could be mentioned.

TWO IMPORTANT POINTS IN INFANT FEEDING.

W. G. MURPHY (*Amer. Med.*, July 19, 1902). writes: In the percentage method of infant feeding most authors state that the basis of calculation is *average* cow's milk, representing fat 4 per cent., proteid 4 per cent, and sugar 4.30 per cent. Upon this basis a modification is made so that cow's milk is closely made to resemble the analysis of human milk. Elaborate formulas have been suggested, often extending into higher mathematics, aiming at an exact and scientific modification. There is no question as to the utility of percentage feeding, but I wish to report a case which illustrates a mistake, very liable to happen, when we assume that average cow's milk always represents the standard given in our formulas. To be exact and scientific we cannot assume. We should know the composition of the milk we wish to modify. Milk bought in open market is widely different in its chemic composition, unless controlled by a conscientious health department or milk inspector, which is not always done. Average milk means the milk of all breed of cows and also the milk from dairies where cheapness of production is the standard, as well as the dairy where the standard is high. To assume that all milk, which is average milk, can be employed as a basis for calculation is not scientific and in keeping with the good work done in the percentage method of milk modification.

The second point he reports is one that emphasizes very plainly the influence of bacteria in milk and the effects of an acid fermentation in a milk correctly modified.

He presents these cases to demonstrate two important facts in infant feeding: first, that without knowing the composition of milk employed, modification is often misleading and is not scientific; and, second, without a good clean milk, chemic modifications are not sufficient as a preventive of intestinal diseases.

LEUCORRHEA.

W. GILL WYLIE (*Med. Exam. and Prac.*, July, 1902). Leucorrhea is popularly understood to be, and I suppose a fair definition is, a whitish colored vaginal discharge. Very young girls are frequently affected with it and it is not a rare thing to have a mother bring her child with the statement that the child has "whites" or leucorrhea.

One of the commonest causes of vaginal discharge in young girls is infection by the nurse, who is not always the most perfect of human beings, and may have some contagious trouble like gonorrhea which infects the child.

Absolute cleanliness of the parts by the use of a weak solution of nitrate of silver is the best method of curing the disease.

Not infrequently a child will have a discharge about the vulva, which is due to a local irritation.

In these cases, the first step is to discover the cause, which is sometimes very simple. A child may have worms which pass into the vagina and cause a discharge.

During the examination of a number of children suffering from leucorrhea, in many cases he found the clitoris in bad condition. It was not only covered by dense adhesions but an irritating discharge was escaping. By combating the general condition and keeping the clitoris clean, and by performing the simple operation of slitting the mucous membrane and stitching it with catgut so as to make the little folds drop to one side, leaving the head of the clitoris very much as you would the head of the penis, the discharge was completely cured. This operation, simple as it is, will have the most wonderful results in a short time in curing chorea.

Local conditions then from irritation not infrequently lead to indications for operation in very young children.

Leucorrhea may complicate many diseases and begin very early in life. As a delicate child grows older, the generative organs fail to develop especially if she is pushed at school, or lives amid unhygienic surroundings. Such a child will have leucorrhea about the time of menstruation, which may be troublesome, and a severer form of the affection may appear after menstruation.

On examination of these cases we find the cervix uteri so abnormal that it calls for careful treatment.

Catarrhal troubles are a source of leucorrhea, and there is (*sic*) doubt that when any abnormal condition causes such an irritating discharge, masturbation is incited.

Obstinate constipation, or any bad condition ot the rectum, will increase the leucorrheal discharge, but the real cause dates back to imperfect development. There are two main causes of leucorrhea: One is imperfect development and a bad local condition of the glands. The other is infection, chiefly gonorrheal.

If we know the cause treatment in these cases is easy. The discharge can be best treated in a young child or infant locally, by putting the tissues in the most perfect condition possible. At puberty, the girl's general health should be carefully looked after, overwork in school should be avoided, and she should be properly fed and clothed, given abundant exercise in the open air, and not thrown in the society of older people.

Gonorrhea is often the cause of obstinate and almost incurable leucorrhea, and it appears in so many forms that it makes the diagnosis difficult.

When the disease has reached the uterine cavity and set up a gonorrheal endometritis, or produced a gonorrheal salpingitis, an irritation is produced which passes into the vagina and causes another form of leucorrhea. The most difficult of all forms of leucorrhea with which we have to deal is that caused by gonorrhea.

Of all medicines used to treat gonorrhea locally, the various forms of nitrate of silver are the best, and what appears to be a weak solution gives just as good or better results than stronger ones. That antiseptic is best which will destroy the germs without materially injuring the tissues or the organic parts. A treatment that abrades or injures the cervix not infrequently aggravates the case and causes an extension of the disease. If you can find an antiseptic which will kill the germs and not injure the structures, you have an almost perfect remedy. Nitrate of silver, ½ grain to the ounce, is sufficiently strong to use in the chronic form of gonorrhea, but in cases which have extended into the deeper glands and the Fallopian tubes, a stronger solution may be required. In these cases the first symptoms are those of a burning sensation, with a discharge about the vulva, painful urination, with sometimes a brownish discharge, gradually becoming greenish, with a peculiar odor; there may be swelling of the vulvo-vaginal glands. There is no other disease which will give symptoms so well marked.

LOBAR PNEUMONIA IN INFANTS.

W. F. Cheney (*American Medicine*, July 26, 1902). The clinical history and physical signs of lobar pneumonia are much modified in these first months of existence, and one perfectly familiar with the picture presented by the disease in adult life may fail utterly to recognize it as it presents itself in infancy.

The onset in infancy is usually sudden, but the initial chill of adult life is rarely seen. Sometimes a convulsion takes its place, and it is extremely important to remember that the spasm in infancy may always mean more than simply disturbed digestion or teething. More frequent than the spasm at onset is an attack of vomiting, followed by several loose movements from the bowels within a few hours, and many a time has this series of events misled the wisest into diagnosing the trouble as entirely digestive. There may be none of these decided manifestations to mark the transition between health and disease, but simply a languor and indisposition that make the mother know her baby is ill without giving her any definite story to tell the physician when he comes.

In lobar pneumonia fever is present from the outset, and usually it is quite high, even higher in infants than in adults. If the temperature by rectum is found to be 104° or 105° F., the physician will scarcely make the mistake of assuming that nothing is the matter. If next he counts the pulse and finds it running 150 or 160 to the minute, again he has positive evidence that something is radically wrong.

The rate of respiration is invariably increased in lobar pneumonia. The normal rate in the infant six months to one year of age is about 30 to the minute. If therefore the baby is found to be breathing constantly 40 or 50 times to the minute, it is reasonably certain that the fever and the general symptoms noted previously are due to some involvement of the lung.

Almost as important as the rate of breathing is the little moan or grunt that so often accompanies each expiration. It is quite typical of lobar pneumonia in infants, and when it is found together with the other symptoms mentioned, it is practically diagnostic.

The expiratory moan, repeated with each breath the baby takes, should tell pretty positively to the physician as he sits and watches, that here is a case in which the lung is involved; and no case that has this sign should any longer be considered obscure. The only misfortune is that not every case of the disease presents it.

One need never look for rusty sputum as a diagnostic sign of lobar pneumonia in infancy, nor for any sputum at all, for infants do not expectorate. The statement that there is no cough is therefore not to be considered in any case as a bar to the diagnosis of lobar pneumonia.

The disease runs a course very similar to that in the adult as regards duration and termination. It is about a week from the beginning symptoms before remission comes; sometimes it is on the fifth day, sometimes not until the ninth. The typical crisis of adult life is quite common in infants as well. Sometimes instead of this sudden crisis the fever makes a drop from the high notch it has maintained for several days to a point two or three degrees lower and then falls gradually throughout the next 48 hours until the normal is reached. Persistence of the fever, of the rapid pulse, and of the respirations, and of the other symptoms beyond the twelfth day almost inevitably means some complication; and in infants this complication is almost inevitably empyema.

The physical signs of lobar pneumonia in infants are often indefinite and misleading. By inspection it is extremely difficult to say that one side moves more than the other; by palpation there can be no deliberate investigation of the vocal fremitus as in adults; on percussion we never find more than a slight diminution in resonance, because of the comparatively small consolidated area under the finger, and the over-distended lung about this, which modifies the note; after consolidation is well established, dullness is usually well marked at one base as compared with the hype:-resonance of the other, but in the beginning the difference is commonly so slight that one cannot be positive it exists.

Auscultation, however, gives us fairly definite evidence of the disease and it should always be relied upon more than any other method of investigation. The points that concern us are the following:

1. The Intensity of the Breath Sounds.—Over the congested area in the first stage the breath sounds are distant and feeble as compared with the corresponding area on the opposite side; this inequality in the loudness of the sounds should always excite suspicion, even if nothing else abnormal is noted.

2. The Quality of the Sounds.—Often it is the harsh, tubular, bronchial quality of the breathing over a certain area that particularly attracts attention. This is more apt, however, to be found after the first 24 or 48 hours, when consolidation has become complete. It is easy to note the abnormality if one compares the finding with that over the opposite lung.

3. The Relation of Inspiration to Expiration.—The diagnostic point is the prolongation of expiration until it equals or exceeds inspiration; and this distinguishes the diseased area, even though the intensity of the sound there is decreased. The healthy lung may have louder breath sounds, but it never has the prolonged expiration characteristic of consolidation.

4. The Discovery of Adventitious Sounds.—This is probably the most important point of all; the presence of clicking, crackling rales at the end

of inspiration over a certain area of the lung is a sign that should always be especially sought for, and that clinches the diagnosis when it is found. It is often present quite early, like the crepitant rale of lobar pneumonia in adults. Later on bubbling rales of various sizes are heard, especially after crisis; but the diagnosis is usually made one way or the other some time before they appear. It is usually a lower lobe that is involved in infants as in adults, and it is therefore in the back, below one or the other scapula that we look for the physical signs in a suspected case. But each axilla should be carefully gone over, and in fact the whole chest, before it is concluded that the lungs are clear.

DIAGNOSIS OF TUBERCULAR ARTHRITIS.

James K. Young (*Ther. Gaz.*, June 15, 1902) writes the following:

The number of diseases from which tuberculous arthritis must be differentiated has increased greatly in the past one hundred years. Before the time of Brodie but two diseases of the joints were recognized—white swelling and arthritis. From a recent chart prepared by the writer to illustrate the different pathological processes with which the joints are affected, it was found that there were about fifty distinct pathological lesions. The differential diagnosis between arthritis, say of the knee-joint, and of synovitis, the disease with which it is most frequently confounded, brings out the different points stated above.

NON-TUBERCULAR CHRONIC SYNOVITIS.	TUBERCULAR CHRONIC ARTICULAR ARTHRITIS.
1. Marked effusion, capsule thickened.	1. No fluctuation, capsule not thickened.
2. Joint outline enlarged and obliterated.	2. Joint outline distinct and clear.
3. Motion nearly normal.	3. Motion limited.
4. Reflex muscular spasms absent.	4. Reflex muscular spasm present.
5. No atrophy.	5. Marked atrophy.
6. Pain absent.	6. Pain acute upon motion.
7. Limp absent.	7. Limp present.
8. Night cries absent.	8. Night cries present.
9. Relation of femur and tibia normal.	9. Tibia subluxated.

(*After Shaffer.*)

Tubercular arthritis should be diagnosed from specific arthritis. The slight fluctuation, the induration and enlargement of the joint, the limited motion, the absence of reflex muscular spasm, the slight amount of atrophy present, the presence of pain upon motion and the absence of night cries, would serve to distinguish this affection. This differential diagnosis does not vary greatly in non-tubercular chronic synovitis, but the history and the effect of constitutional remedies would be of use in clearing the diagnosis.

The disease with which tuberculosis of the joints is most frequently confounded in infancy is articular rheumatism. Rheumatism in childhood is such a rare disease that the occurrence of joint disease should be very carefully investigated for the cardinal symptoms which have already been given. When spasm, atrophy, peripheral pain, etc., occur in a single joint, great care should be taken to avoid an error in regard to the real cause of the disease.

A rare affection with which tuberculous disease is sometimes confounded in sarcoma of the joints. This is most apt to occur in the spine, and in this region it can be differentiated by the history of malignancy in the ancestors, by its rapid course, the early appearance of cachexia, local tenderness, the absence or rounded appearance of the deformity, the absence of abscesses, the early and complete paraplegia, the emaciation and anemia which occur early, and the metastasis which occurs to other organs, especially the liver.

X-ray photography furnishes an important means of diagnosis. By it we can distinguish the amount of destruction of bone tissue present, and can easily distinguish between the presence of synovitis or arthritis. In synovitis the outline of the joint is clear and distinct, whereas in tubercular arthritis the joint outline is roughened, irregular and worm-eaten.

CYCLIC ALBUMINURIA.

WM. E. HUGER (*Med. Exam. and Prac.*, July, 1902) concludes an article on the subject as follows:

That the cyclic albuminuria, like the recognized pathological albuminuria, is due to one or perhaps all of three causes:

1. Inflammatory and degenerative changes in renal structure, as evidenced by the finding of casts. There is every reason to think that by careful searching casts will be found far more often than previous reports lead us to believe.

2. Alterations in the quality of the blood which render its serum-albumin more diffusible. There is nothing to prove an inferior diffusibility in these cases, but the patients are almost always anemic.

3. Alterations in the degree of blood pressure. Here due to a mechanically increased pressure on the renal veins.

Having learned that occasionally these cyclic cases pass into Bright's disease, but that by far the majority have gotten well and that many have been followed for years and then lost sight of in their same condition, it must be admitted that Moxon and Arnozan were right in dividing them into two groups: (*a*) Those few which develop a continuous albuminuria, and (*b*) the vast majority which get well. Continued rest in bed for a long period should always be urged, because at any rate it removes the exciting cause. One of my cases remained free from albumin for three months after being in bed for three weeks.

I believe that by a very careful examination for casts a large percentage of cases will be found to contain them, and that the serious prognosis given because of their presence will be modified.

PEDIATRICS

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EDITORIAL COMMENTS

Meeting of the British Medical Association at Manchester

We take pleasure in presenting to our readers in this issue the first half of a very complete and interesting report of the Proceedings of the Section on Pediatrics at the Manchester Meeting of the British Medical Association. Promises have also been fortunately secured of a number of original articles read before the same Section. These will be published in early forthcoming numbers of Pediatrics.

Roentgen Rays in Sarcoma

Dr. Wm. B. Coley publishes an account in *American Medicine*, Aug. 16, 1902, of a dozen or more cases of sarcoma treated with the X-rays. After mentioning some tentative treatments along the same lines by other physicians—two cases much improved and one (a bad round-celled sarcoma of the neck) entirely cured in an incredibly short time,—he describes his own cases at length. The apparatus was "a 12-inch Willyoung coil with fairly high tubes, and the usual distance 8-10 inches." Case I was a woman of 45, under treatment for round-celled sarcoma just above the clavicle and in the axillary glands. Operation in 1900 was followed by "mixed toxin" injections,—with only temporary relief. In expectation of her early death the X-ray treatment was tried as a last resort in February, 1902. Four or five exposures per week were given. A marvelous change was wrought within three weeks, and in July the patient was discharged cured. Case II was a sarcoma of the femur in a young man of 19 years. Dubious benefit resulted, metastases in the lungs being now feared. Case III was a sarcoma in the pectoral region; coincident treatment with toxin injections and X-rays worked apparently complete cure in about three months. Case IV showed no benefit. Case V died. Case VI is still under treatment, with little promise of cure.—Case VII was improved by toxins but not affected by X-rays. Case VIII, a male, 22 years, was cured. Case IX cured.—Case X doubtful; still under treatment.—Dr. Coley also reported four other cases of inoperable sarcoma first treated with mixed toxins in which the subsequent use of X-rays has been followed by remarkable and gratifying improvement.

Such admirable results as this in so dreadful a disease are certainly most encouraging, and we feel that Dr. Coley hardly does his own work justice in his summary of conclusions, which is appended:

CONCLUSIONS.

"I am conscious that the present series of cases is too small and the time of observation too short to justify one in drawing any dogmatic conclusions as to the permanent therapeutic value of the Roentgen-ray in sarcoma. Still, I believe, we are warranted in stating:

"1. That the results in the cases thus far treated prove that the Roentgen-ray has a remarkable inhibitory action upon the growth of all forms of malignant disease and that this is especially true of sarcoma.

"2. That this action in many cases of even far-advanced and inoperable malignant disease may result in the total disappearance of the tumors, often without any breaking down of the tissues, the new growth being apparently absorbed.

"3. Whether the patients have been cured, or the disease has been merely arrested, to reappear at some future date, is a question that time alone can decide.

"4. Recent observations and experiments upon the various forms of carcinoma prove that an agent supposed to be of value only in a very limited class of superficial epitheliomas promises to be of as great or even greater value in practically every variety of cancer.

"5. While at present there is little evidence to show that deep-seated tumors in the abdomen and pelvis can be cured or benefited by the Roentgen-ray, there is still some reason to hope that with improved apparatus or with greater knowledge and skill in using the apparatus that we now have, even these cases may be benefited.

"6. The Roentgen-ray has a very marked influence upon the pain of nearly all types of malignant tumors, causing entire relief in many cases." B.

Culex Sollicitans, the Salt Marsh Mosquito

Prof. John B. Smith, of Rutgers College, State Entomologist of New Jersey, has just published a monograph on *Culex sollicitans*, the paper being a bulletin of the New Jersey Agricultural Experiment Station.—The life-history of this mosquito is described, and its predilection for salt marshes and sea-water pools as a breeding-place is fully proved. The paper will be of much value to those practically interested in the extirmination of mosquitoes. B.

Chinese Physician Returns.

The first Chinaman to receive a diploma from an American medical college is Dr. Yung Wing, who was thus honored by Yale in 1854. He has just returned to this country after several years' absence in his native land, where he introduced many of the modern methods of medical practice, despite the strenuous opposition of Celestial doctors.—*Amer. Med.*

ORIGINAL ARTICLES

THE THERAPEUTIC VALUE OF THE INTERNAL USE OF CARBOLIC ACID.*

By S. Henry Dessau, M.D.,
New York City.

THROUGH your kind invitation, Mr. President, I wish once more to call your attention to the definite value of carbolic acid as an internal remedy. It is perfectly natural that there should exist among the profession at large a feeling of incredulity and hesitation concerning the virtues of a remedy whose reputation is so closely associated with a history of criminal poisoning, to say nothing of our early prejudices founded upon false interpretations of its physiological manifestations.

It is chiefly therefore for this reason that I wish to record my personal experience as to its therapeutic effects, and so, if possible, encourage and induce others either to confirm or disprove and reject my own observations.

My experience with the internal use of carbolic acid began in 1894, and I published a paper on the subject in the *New York Medical Record*, September 12, 1896, and a later one in the *Therapeutic Monthly*, May, 1901. In these papers I stated my reasons for the principle upon which its use was based. To repeat, this was for its action as an internal antiseptic, insofar as we can understand what that class of remedies means. In other words, if it is true that certain diseases are produced by the action of certain bacterial organisms entering into the human body, then carbolic acid, which, according to Gillespie, as stated in his Natural History of Digestion, is preëminently the type of germicides, being evolved by nature in the physiological processes of animal digestion should be accepted as a specific remedy against the disease-action of a certain class or variety of germs. Clinical results seem, from my observations, to bear out this idea in a most satisfactory and gratifying manner, more especially as the remedy is one which, when carefully used and the dose proportioned according to age and size of the patient, produces no secondary or reactionary effects.

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* Read before the Medical Society of Greater New York, June 1, 1902.

My experience with the therapeutical effects of carbolic acid has been chiefly in the treatment of catarrhal complaints involving the respiratory tract. From the peculiar clinical picture presented in these cases, there was the best of reasons for attributing them to a specific origin, viz., the influenza bacillus. By far the larger number of my patients thus affected have been infants and children, but I have also treated many adults similarly affected, where the complex of symptoms was easily recognized as influenza. The group of symptoms to which I refer in children comprise a dry, aggravating cough, sometimes becoming paroxysmal, with little or no expectoration, and that of a tenacious, viscid character when present, being seldom or never muco-purulent. The physical signs in the lungs show few or no râles, those heard varying in size and are of a dry, adhesive quality, even after the cough has existed for many days. Frequently in the younger children there may be heard in the interscapular spaces an indefinite harsh quality of the respiratory murmur that may well be compared to the broncho-vesicular murmur of Flint. The cough may or may not be associated with a coryza, sometimes excoriative; or a pharyngitis, a post-nasal catarrh, a conjunctivitis, or even an otitis media. There may also be a marked rise of temperature lasting for a number of days after the onset of the affection. The most notable feature of these various symptoms is their persistency and tendency to alternate with each other as a recrudescence of the trouble. Intestinal symptoms may in this manner alternate with those of the respiratory function. In a few cases complications of pneumonia and pleurisy have been observed.

All such cases as these have been treated almost entirely with the one remedy—carbolic acid, with better and quicker results than any other treatment I have used, and these have been many. Especially are the results most satisfactory in those cases where it is almost impossible to keep the little patients in bed. The method of administering carbolic acid, I think safest is in the form of a solution of the strength of 1, 2, 3 and 5 per cent. The dose given is according to the age of the patient—an infant under one year of age receiving a teaspoonful of the 1 per cent. solution every two hours, while a child of five years may get the same dose of a 5 per cent. solution. A small amount of glycerine aids in preparing a more complete solution, and lately I have used cinnamon water as an expedient to aid in disguising the pungency of the acid. Only the chemically pure acid should be ordered for internal use. The mothers are always told that the medicine smells of carbolic acid. This is done to allay any suspicion that a mistake in dispensing might have been made.

Although I do not hesitate to recommend the use of carbolic acid as an internal remedy on the principle of its internal antiseptic influence, it would scarcely be fair to regard it as a specific remedy in every infectious disease. I believe that it has its limitations and that it is best indicated in those diseases where the disease-germ is of a weak nature and manifests its pathological action principally upon the mucous membranes. I also believe that its field of usefulness will eventually prove broader than we now know of, and that such diseases as erysipelas, scarlatina and even typhoid fever and pneumonia will prove amenable to its therapeutic influence. Already we have learned from various reliable and trustworthy reporters of the good results observed from the use of creosote and its preparations in the treatment of pneumonia, and to my mind there is no valid reason why carbolic acid should not show equally good results. The advantage of carbolic acid pharmaceutically as an internal remedy over creosote is that for children it makes a better solution and has a less disagreeable odor.

In this short paper it is unnecessary to dilate upon the advantages of carbolic acid as an internal remedy over the coal-tar and aniline derivatives, although it may be possible that these latter possess antiseptic properties to a certain extent. Nor is it hardly necessary to explain its physiological action, further than to state that it has been found by me as well as others to be perfectly harmless and free from secondary effects when administered in the doses mentioned. The smoky color of the urine we now know depends upon the elimination of the acid in a changed form, known as the glycuronate of hydroquinone and pyrocatechin. The presence of albumin in the urine may or may not be due to an irritation of the kidneys by these substances, but as a matter of fact no interference with the renal funtion has ever been observed by me while administering carbolic acid in now some 4,000 cases. The only idiosyncracy observed against its use has been that of vomiting.

For Impetigo Contagiosa.

Dr. Martin F. Engman (*Medical Bulletin of Washington University*, April) records the following prescription used in the service of Prof. W. A. Hardaway, as "almost a specific when properly used":

℞ Precipitated sulphur.
Zinc oxide.......... } of each 1 drachm
Potassium sulphide..
M. Sig.—Shake and apply as directed.

The crusts should first be removed by a boric acid cream (boric acid, grains 15, to cold cream 1 ounce); by applying the cream often, until they are softened by the grease. Care should be taken not to irritate the skin in the removal of the crusts, as too energetic measures will cause loss of time. When the crusts are removed, the face gently washed with soap and warm water and then thoroughly dried the above lotion should be applied. Cotton or a sponge must not be applied in the application as the meshes retain too much of the powder; a clean cloth or handkerchief is better. After shaking the bottle a little of the lotion is poured into a saucer and the cloth dipped in it, and then sopped on the lesions by gently tapping it over the place. A few minutes should be thus employed, and the lotion allowed to dry on. This should be repeated several times daily, and if a crust reforms, it should again be gently removed by the cream and the former process repeated as before. In children or women with delicate skin, when infected with these circinate lesions, the lotion should be diluted one-half with water.—*N. Y. Med. Jour.*

A CASE OF MENINGITIS.*

By Hugh N. Leavell, M.D.,
Louisville, Ky.

I SAW a case of more than ordinary interest in the Clinic of the Hospital College of Medicine some time ago, a female child, aged 2½ years, with the following history: She had chronic suppurative disease of the middle ear which had existed for some time; she had been improperly fed for several consecutive months, having been given everything that the parents (German people) had been in the habit of eating—kraut, cold lunches, beer, etc., and as a result the child had developed a diarrhea, having three or four actions daily, which had continued for several months.

On the Sunday evening preceding the Wednesday when she appeared at the clinic the child had eaten unusually heartily and her bowels had not moved on Monday nor on Tuesday. The student in attendance had given her a mercurial purge, 1-10 grain of calomel every hour until ten doses had been taken, followed by castor oil, which had produced only one evacuation.

The child presented a perfectly apathetic condition: there was no pain referable to the stomach as far as could be ascertained, and nothing attributable to a stomachic disorder except the sudden cessation of the activity of the bowels.

Dr. S. G. Dabney examined the little patient, and on account of the history of a non-painful perforation of the drum membrane, long-continued emaciation, slight elevation of temperature.and apathetic condition present, he made the probable diagnosis of meningitis following tubercular otitis.

No alarming symptoms developed for a few days. On yesterday the student in attendance asked me to see the child. I found considerable protrusion of the eyeballs, strabismus, bulging of the fontanelles, the "*taches cerebrales*" as it is called, that is when the abdomen was stroked with the finger-nail three or four minutes afterward a distinct redness developed which continued for several minutes; there was some little exaggeration of the reflexes. These symptoms led to a positive diagnosis of meningitis.

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* Reported to the Louisville Clinical Society.

The point of interest was whether this was of tubercular origin, of intestinal origin, or from absorption of poison from the otitis media. The history of the case would lead us to suppose it tubercular. On the other hand, the sudden cessation of activity of the bowels preceded by an unusually voracious appetite and diarrhea, would lead us to suspect that the condition might be of intestinal origin. Thirdly, the meningitis might be due to conditions entirely idiopathic. But the preponderance of evidence is in favor of tubercular origin.

The rather sudden onset is a matter of interest. Cases of tubercular origin we usually expect to be insidious in development.

Because of these interesting factors I thought the case worth reporting.

DISCUSSION.

Dr. S. G. Dabney.—When this child was seen in the clinic I was struck with its appearance as it lay in its mother's lap—we all know how sometimes we make guess-diagnoses and in this case I believe I guessed correctly.

The child was entirely apathetic. I did not have an ophthalmoscope with me to examine the interior of the eyes, but the child had a curious stare; it had no retraction of the head, no convulsions, no pupillary symptoms, the temperature was 99½° F. There was a history, however, of progressive loss of weight. When the mother made this statement I looked at the child's face and was somewhat skeptical, but when I examined its legs and body I found they were greatly emaciated.

The mother told me that the child had had a "running from the ear" for some months; there had never been any pain or earache, but these two symptoms, progressive emaciation followed by painless suppuration of the middle ear, together with the peculiar appearance which the child presented at the clinic led me to the conclusion that it was probably a case of tubercular disease of the middle ear followed by meningitis.

Whether the meningitis was originally tubercular or whether it was caused by the otitis media is a question; I think it is the result of the middle ear disease.

I examined the ear closely and found the auditory canal blocked up with a considerable mass of granulation tissue, which I curetted out thoroughly so as to make good drainage. There were no mastoid symptoms, no tenderness that could be elicited on deep pressure over the mastoid, no sinking in of the upper and posterior wall of the auditory canal, no profuse discharge.

I did not see that there was anything to be accomplished by operative treatment upon the ear beyond making good drainage through the canal. I thought the probabilities were that the meningitis had resulted from the suppurative otitis media and that the meningeal involvement came through the roof of the tympanum or the labyrinth rather than through the mastoid process. There had been no previous treatment, although the mother had noticed the progressive emaciation and the painless discharge from the ear for some months.

We might have examined the discharge from the ear with the microscope to see if the Koch bacillus was found. I have done that in several cases in private practice, generally with a negative result, though the subsequent tubercular character of the case became plainly manifest.

Transcendental Pathology.

The *Lancet* for July 12th says: In the issue of the *Northern Echo* of June 27th there are two typical advertisements emanating from an antivaccinationist. His name is J. Clayton and he lives at Middlesborough. He calls himself a medical herbalist and tumor specialist, but he gives advice and treatment with regard to all complaints. During the last nine years he has taken off over 200 tumors without cutting from almost every part of the body—'Cause, Vaccination.' Mr. Clayton's views on pathology are simple. He professes to believe that vaccination causes tumors 'because when the tumor comes off you can see the same number of holes in the part where the tumor comes off, oozing with matter that correspond to the same number of marks that are on the arm, so that it leaves no doubt on the subject.' Mr. Clayton further states that when the calf lymph travels to the liver it breeds smallpox, when it travels to the throat diphtheria. When the lymph travels to the brain we have diseases of the mind. We are compelled to think, continues the *Lancet*, from this remark that Mr. Clayton has evidently been vaccinated.—*Med. News.*

CHILD LABOR.

By P. F. Barbour, A.M., M.D.,
Louisville, Ky.

IN a paper read before the Louisville Clinical Society the author said in part: That the growth of cotton manufacturing in the South has created new economic conditions which offer new problems for our consideration. The machinery used has been so perfected as to be almost automatic and the labor required for its direction need not be skilled; in fact in weaving the cheaper grades of cloth the laborer is required only to watch the threads and when they are broken tie them securely and start the machine again.

As the work is not heavy and does not require skilled labor it was inevitable that women and children would be drawn into it and this has proven the case. Such labor is cheap and there has been every inducement for manufacturers to employ women and children.

The greed of human nature is such that whenever possible more and more work is thrown even upon children, and unless one's attention is forcibly called to it the extent to which children are employed, and the grave sociologic, economic and physical dangers go unappreciated, and great harm will be done to the children,—the future men and women of the South,—for it is in the South only of all civilized portions of the globe that the slavery of children is still permitted and where efforts in behalf of the innocent and unprotected have been most actively antagonized.

One or two facts may be unknown. First, that the hours of work for children under twelve in cotton mills are often as long as eleven and one-half hours per diem, and in "rush" seasons they may be put on an all-night shift; for such labor the daily wages may be from 10 to 15 cents.

Secondly, that the number of children under fourteen so employed is over 16,000 by a conservative estimate and is rapidly increasing.

The effect of factory labor upon children began to attract attention in England early in this century, and the outcome of the observations was that England and Continental Europe and the northern States of this country passed stringent laws governing the employment of children in factories; public sentiment backs up enforcement of these laws. But in the Southern States no adequate provision has yet been made for the protection of this helpless class. It would seem that humanitarianism should be paramount to commercialism, but it is not so.

The chief claim of large factories is that child labor is almost necessary to their existence in order to make a profit on the investment. Some of the cotton mills of Alabama in the recent fight made on child labor before the Alabama Legislature virtually threatened to remove from the State unless allowed to employ children at the nominal wages above stated, although it is said dividends upon such property average 25 per cent. and in some cases reach 100 per cent.

Some families are almost entirely supported by the children, and employment of the father is conditioned upon his having one or more children who can be "worked" in the mill for ten to eleven and one-half hours per day.

It is very easy to foretell that labor of the children will be brought into competition with that of the father and the result will be a reduction in the earning power of that father, an economic fact which seems not to be appreciated by the workingman.

A potent objection to the employment of children is that they are thereby prevented from obtaining that free education which is almost a birthright in northern States. This absence of educational advantages will result in the child growing up ignorant and untrained; and eventually, trained, experienced and high-priced workmen will have to be imported for factories which may spring up and need trained artisans.

The Negro in the South is grasping every opportunity for education. The white man of the working classes is sucking the life-blood out of his children by working them in mills and by denying them education. It does not require a prophet to foresee a future which will be a curse to the white population of the South.

The moral character of factory girls is not necessarily bad, yet all who have seen anything of factory life, even among older and more mature girls, will recognize its debasing influence. How much greater the danger in girls and boys of ten to twelve years of age who must develop up to puberty in such an environment.

Combine ignorance, lack of education and home influences with youth and the wonder is that more crass immorality does not exist under such unfavorable conditions.

It is the boast of many factories that they "have done so much for their employees," libraries, school, natatoria, etc., having been erected for them, but these things will be found wanting when weighed against the loss to the children from the hard physical conditions under which they labor. To quote from an able article on "Child Labor in Alabama," by Mrs. Irene McFadyen:

"Dr. Torrop is the chief authority in Lancashire, England, on the subject of child labor, having had thirty years' experience as a medical man in the textile district. He says that a promising child often who is allowed to work even a few hours a day often degenerates before he is thirteen. He noticed a certain amelioration in health when the half-time age was raised from ten to eleven, for with every year the child gained a little more of resistance to unhealthy conditions.

"The whole population, he says, has been stunted by too early toil, and the enfeebled condition of the operatives has become a source of danger to England's future.

The normal stock of the Lancashire folk is among the strongest and finest of English peasantry, but four generations in the mills from early childhood has entirely changed and depreciated the type. They look a different race of beings; cramped life and stunted growth show themselves whichever way you turn—practically the whole operative class bears traces of the blighting effects of premature toil.

"An investigation was made in the schools during 1899 into the health, height and weight of 1800 half-timers who had been in the mills a year or more, as compared wiih that of 2,000 full-day scholars. Only 15 of the half-timers looked healthy and they were the children of parents from the rural districts. No one could fail to pick out the mill children at a cursory glance. The result showed a deficiency of 12 pounds in weight below the average child of working parents and 22 pounds below the child of the wealthy classes. The differences in growth and height were 5 and 7 inches respectively."

Who can estimate the mental, moral and spiritual loss to the child indicated by those figures?

In the last few years much study has been given to the effects of fatigue upon the child. The deleterious results of overwork, mental or physical, have been noted in various ways in the growing child—studies which show the loss of mental concentration from being in school a few hours each day, with its diversified interests.

More apparent are the effects of fatigue upon the physical well being of the child. We know empirically that fatigue lessens very markedly the power to resist infections, and a closely maintained attention is just as potent a factor in producing fatigue as is physical work.

Another factor to be noted is the atmosphere in all manufactories, especially of those of cotton or woolen goods and tobacco. The constant breathing of factory dust is a cause of tuberculosis in an alarming number of cases. Those who have had much clinical experience in this city will have been struck with the frequency of tuberculosis among such operatives. Now put children at continuous labor in such an atmosphere and the high mortality is easily explained.

"Dr. Barwise, medical officer for Blackburn, England, showed that 29.9 per cent. of deaths among cotton operatives occurred between the ages of ten and twenty-five, while among the common laborers the percentage is only 6.8." (McFadyen).

While the physician cannot often accomplish large reforms in existing conditions his personal work with his clientele can influence private opinion and so aid in the enforcement of laws for the protection of child labor.

"Try to conceive," says the investigator above quoted, "how much joy and gladness and health and childish delight and hope have been lost in those 22 pounds avoirdupois and 5 or 6 inches. Then you will begin to get the measure of our continued offense against our little ones in these closing months of the nineteenth century."

Life of the Typhoid Bacillus.

A bacteriologic test of specimens of earth taken from the site of Camp Thomas, at Chickamauga, is being made to determine if the typhoid bacilli responsible for the recent outbreak of typhoid fever had retained their vitality since the epidemic during the Spanish-American war.—*Amer. Med.*

SOCIETY REPORTS

BRITISH MEDICAL ASSOCIATION.

Seventieth Annual Meeting, Manchester, 1902.

SECTION DISEASES OF CHILDREN.

President, HENRY ASHBY, M.D.

First Day of Meeting, July 30, 1902.

The President, in opening the meeting, said that the Council of the British Medical Association had interdicted presidential addresses. He desired to offer a cordial welcome to the distinguished visitors who were present. It had been difficult to decide upon a suitable subject for discussion, but when the subject of **Infant Feeding** had been chosen it did not take long to decide whom to ask to introduce it. Dr. Rotch, whose name and work were well known wherever our common tongue was spoken, kindly responded at once to the request, and we had much pleasure in calling upon him to open the discussion upon "The Modification of Milk in the Feeding of Infants."

Prof. T. M. Rotch, in opening the discussion, said one thing which stood in the way of a fuller understanding of the principles of infant feeding was the difficulty of comparing the results of observers in different parts of the world. Even his own earlier results would not be compared with his later, because he now had much better means at his disposal for carrying out his investigations.

Our ideas may differ as to the kind of food required for infants but it will be a good advance if we can agree that our results should be stated so that they can be compared with one another. One physician may believe in giving starch, and another not, but we want to know exactly how much starch is being given, and in what proportion to the other ingredients present. Only so can our results be exact. After gaining much empirical knowledge of various kinds of food we are now returning to the natural food on which, all over the world, we find that infants thrive best. We must therefore give some attention to the study of breast feeding.

The lowest mortality results from breast feeding, but it is not merely good breast milk which is required, but breast milk which is suited to the particular baby. We must recognize also that danger may arise even from breast feeding, e.g., from sudden danger in the milk such as may result from various disturbances. There is nothing ideal about breast milk.

TABLE I.

Human Breast Milk.

	Fat.	Sugar.	Proteids.	Ash.	Total Solids.	Water.
1	5.16	5.68	4.14	0.17	15.15	84.35
2	4.88	6.20	3.71	0.19	14.98	85.02
3	4.84	6.10	4.17	0.19	15.30	84.70
4	4.37	6.30	3.27	0.16	14.10	85.90
5	4.11	5.90	3.71	0.21	13.93	86.07
6	3.82	5.70	1.08	0.20	10.80	89.20
7	3.80	6.15	3.53	0.20	13.68	86.32
8	3.76	6.95	2.04	0.14	12.89	87.11
9	3.30	7.30	3.07	0.12	13.79	86.21
10	3.16	7.20	1.65	0.21	12.22	87.78
11	2.96	5.78	1.91	0.12	10.77	89.23
12	2.36	7.10	2.20	0.16	11.82	88.18
13	2.09	6.70	1.38	0.15	10.32	89.68
14	2.92	6.55	2.12	0.15	10.84	89.16

The composition of breast milk varies greatly. Table I gives the figures of a number of careful analyses from fourteen women all nursing their own babies and all the babies thriving. I was quite astonished to find how much variation one gets. This shows that the constituents of breast milk vary in health as well as in disease. *Human breast milk is thus a varying food.* These facts must be allowed for in determining what food is to be given to an infant. If this is to be done on scientific lines we must have the best means at our disposal for altering the proportions of the different elements. For this, our instruments should be as accurate as possible. To secure this end the speaker had been led to devise a system of milk laboratories. For the past fifteen years he had been working at this subject, and as many obstacles and fallacious arguments had been placed in his way, he desired to bring forward the actual results of his experience.

In England, as in America, physicians had given too little attention to the proportion of the different constituents of milk and often even proprietary foods had been used instead. In America they did not believe in any of these. At best they were mere adjuvants to the milk. Physicians should not accept the dictates of capitalists or nurses on such a question, but should take the trouble to prescribe accurately the elements which are to be given during the first year of life. In studying the advantages, as well as the dangers, which arise in making these combinations, not only in the laboratory but in the home, we must, if we would compare our results, learn to think, and speak and write in percentages.

It is necessary to understand the process of digestion in young infants. A fact of great importance is that starch is not digested at the time of birth. This power should be allowed to develop naturally, and should not be used until it is developed about the end of the first year. The use of starch has been advocated to break up curd. This it doubtless does, but there are other and better means of attaining the same end of acting upon proteids. Starch is not present in the milk of any mammal and must therefore be regarded as a foreign element. He would say that if a physician thinks he should give starch in a special case, he ought to give it in a definite quantity to act as a mechanical diluent. There is no difference in the action of oatmeal, wheat, or barley. The action depends upon the starch. An addition of about .7 per cent. may be said to be the best. An addition of .3 per cent. gave a much coarser curd. It is better not to dextrinize the starch.

Albumen water and lime water have no effect upon the curd.

Cane sugar is also a foreign element. Milk sugar is much better.

Human milk is less acid than cow's milk. Hence cow's milk should be rendered slightly alkaline by the addition of lime water. An ordinary addition is 5 per cent. Lime water has been proved not to do any harm. The amount of lime is insignificant.

In the preparation of a substitute food milk has been found to be the best substance to be used, and no matter what animal's milk is used it must be modified. It is an exception for an infant to be able to digest unmodified milk. All have to be modified, and when we begin it is as easy to modify one as another. Therefore we should use the milk which can be most easily procured. In the world at large this is the milk of the cow. The milks of the ass and of the goat have been supposed to approximate more nearly the human milk, but the approximation is not near enough to permit their being used without modification. As to the breed of cow—Devons, Durhams, Ayrshires, Brown Swiss and Bretons are very good, and many others are useful in their own countries. The milk of a herd is to be preferred to the milk of one cow. The nature of the proteids, fats, volatile glycerides, etc., varies greatly. The volatile glycerides do not exist at the time of milking but appear much sooner in the case of some breeds than of others. They are of importance with reference to the emulsion and the difficulty of restoring it when oil droplets appear on the surface.

As our basis in the modification of milk we should take the analysis of the milk procurable in our own district. It must be remembered that the cow's milk is apt to be interfered with, like human milk, by various circumstances, In the case of cows the principal factors are:—

Change of milker;
Change of rate of milking;
Exposure to weather;
Sickness;
Time of year.

Variations are present also at different parts of the milking (table II).

TABLE II.

Variations During the Milking Periods.

	Fat.	Total Solids.	Water.	Mineral Matter.
Fore milk	3.88	13.34	86.66	0.85
Middle milk	6.74	15.40	84.60	0.31
Strippings	8.12	17.13	82.87	0.82

A good theory may be spoiled by the use of a bad primary milk, and a good primary milk and a good modification of it may prove disappointing by failure to adapt its use to the individual infant. Attention may therefore be called to the size of the infant's stomach, to the rapid increase in size during the early months of life and to the symptoms (e.g., asthmatic) which may result from overdistension. During the early months of life the amount of milk given should be rapidly increased; about the middle of the first year the quality rather the quantity should be improved, and later the proteids may be increased relatively to the sugar.

By the use of laboratory methods infants are fed hundreds of miles from the laboratory. The milk is not boiled and no preservative is added. Milk heated to 212° F. does not seem to do any harm, but the reasons for heating are no longer what they were before laboratory methods were introduced. The bacteriology of milk is well known, and therefore the part of the paper dealing with this subject need not be read. It may be sufficient to say that 10,000 bacteria per c.c. should be the maximum permitted, and this should not be allowed in a milk intended for infant feeding. The milk from the farm supplying the Philadelphia laboratory has been carefully examined, and during a year there were only twenty days when the average was over 20,000, and in the winter the number fell to 1150 to 1195.

The color of the milk does not indicate the amount of fat. A chalky-white milk may have much fat. The Holstein milk, for example, contains much fat, yet is very white.

We have therefore a problem to deal with, forming a chain of many links, and we must not exaggerate the importance of any one link, for instance, that the percentages must be the same as in human milk, for do we not find that human milk itself varies greatly, and that because nature adopts the milk to the infant?

The modification of milk by simple percentage composition was not found to be uniformly successful. It was thought that this might be due to the bacteria present, and hence boiling, and then pasteurization of the milk, were introduced.

Even with these measures digestive disturbances occurred. The next advance was to show that the sterile food should be given without changing its nutritive value. Heating even as low as 161.6° F. coagulates the proteid and therefore makes the milk differ from human milk. One therefore wants a sterile milk which has not been sterilized. This brings us back to the original supply. With this object in view the speaker had during the last ten years been endeavoring to bring the supply of milk for infant feeding under the control of medical men. This he had succeeded in doing in a number of towns in the States. With the assistance of Mr. Walker and Mr. Gordon he had been able to establish milk laboratories where the milk is under medical control. In this he had made use of the following chain of protection for the infant:

(A). The animal most readily available must be used, i.e. the cow.

(B). The Holstein herd is the best where it can be had. It gives an abundant supply of good milk and is not very liable to tuberculosis.

(C). The milk must be modified in the best way and kept aseptic.

The Walker-Gordon Laboratory

℞

	PER CENT.	
Fat....................................		
Milk-sugar..........................		
Whey Proteids		
Caseinogen..........................		
Lime Water..........................		

Heat at......................................°F...............

Number of Feedings...

Amount at
each feeding..℥

ORDERED FOR

....

ADDRESS

....

DATE...**190**

....**M.D.**

NOTE.—Physicians who do not wish to subdivide the proteids may erase the words *whey* and *caseinogen*.

1. The care of the cows. English cows are more outside than American and therefore more variable in their feeding. Their milk is therefore more variable. In America the cows are housed and their food is the same all the year round.

2. The cows are groomed away from the stable, and a dry grooming is usually preferable to a wet.

3. There should be an ideal cow-house, with a gutter capable of being thoroughly washed out. The cows should be kept from lying down until milked. Flies should be ex-

cluded so far as possible. The flies most troublesome to cows breed in horse manure, and therefore cows should be quarantined from horses.

4. The cow's health must be carefully supervised, and any animal which appears sickly or exhibits a rise of temperature must be isolated at once.

5. Careful tuberculin tests must be carried out.

6. Microscopic examination for colostrum corpuscles, pus cells, streptococci, etc., must be carefully made. More than five corpuscles in a field of a 1-12 inch immersion lens should condemn the milk.

7. The hands of the milkers should be examined. In the laboratory farm many of the milkers are college graduates who are learning the method. The dress, stools, receptacles for the milk, etc., must all be sterilized. Covering the udder interferes with the formation of the milk, but a new apparatus for this purpose is being experimented with in Scotland.

8. It is better to milk the cows in their stalls than in a special milk-house.

9. The milk is carried at once to the milk-room, which the milkers are not allowed to enter, and poured through sterile cooling pipes. The air passing into the milk-room is cooled and washed. The bottles are brought in on sterile trays.

10. The dairymen must be healthy and clean. No one else must be allowed into the milk-room.

11. In the milk-room are the separator and the jars for the cream and separated milk.

12. These are sent to the laboratory, which should have quite a separate office where the physician's prescriptions are to be received.

13. The process of percentage modification is carried out according to the physician's directions.

The possibility of ordering any percentage of the various constituents of milk is commonly called the American system. We now believe that certain infants do not have an intolerance for milk, but only for certain constituents, so that we can speak of fat indigestion, proteid indigestion, etc. The great point in the system is that it can he adapted to any sort of indigestion, provided only that the physician knows what he wants. We are not, however, able to regulate the salts in the milk.

The detailed description of the milk laboratory may be omitted at present. In the laboratory stand ready for use:—

Sterile water;
Cream of different percentages;
Fat-free milk.
Milk sugar;
Whey;
Various cereals.

Milk can be sent out free from fat, free from sugar, etc. The sugar-free milk is very valuable for treating cases of diabetes. The proteids also can be reduced to a fraction.

The cereal diluent can be added in any definite proportion, e.g. .7 per cent. if required as a diluent, or in larger proportions later when required for nutriment.

There has been a great deal of discussion as to whether the emulsion is altered by modification. In his experience there is no alteration whether centrifugal cream, gravity cream, or plain milk is used. In all cows the emulsion is the same. This teaches us that we can use a cream as fresh as the milk we are using and the mixture is as good as if we waited for the gravity cream.

Sometimes globules of fat are found in the bottles. This is not due to the use of centrifugal cream, but to transportation plus too great heat. It does not occur if the bottles are kept on ice during transit.

In home modification the number of bacteria is always greater. It is impossible to exclude bacteria except in a specially built room. Such a room can be more aseptic than an operating theater. There is no audience. There are no visitors. The perfection of the method is proved by the fact that unheated modified milk can be sent unaltered for very long distances.

The proteids of milk are very important and were studied by Frankland, in England, as far back as 1854. In the case of young infants it is best to begin with a low percentage of proteid. By separating the caseinogen and the whey proteids we get what we speak of as "split proteids." The proteids are often as high as 3 per cent., but this represents only 1 per cent. of caseinogen. It is seldom wise to order over 5 per cent. of fat except where cod-liver oil is indicated. Often a fat-free milk is useful for a time, for instance, in duodenal irritation.

Lactose is the most constant constituent.

PRESCRIPTIONS that it is now possible to fill at

The American Milk Laboratories.

Fat.	Caseinogen.	Whey Proteids.	Sugar.
1.00	.25	.25	4 to 7
1.00	.25	.50	4 to 7
1.00	.25	.75	4 to 7
1.00	.50	.25	4 to 7
1.00	.50	.50	4 to 7
1.00	.50	.75	4 to 7
1.50	.25	.25	4 to 7
1.50	.25	.50	4 to 7
1.50	.25	.75	4 to 7
1.50	.50	.25	4 to 7
1.50	.50	.50	4 to 7
1.50	.50	.75	4 to 7
2.00	.25	.25	4 to 7
2.00	.25	.50	4 to 7
2.00	.25	.75	4 to 7
2.00	.50	.50	4 to 7
2.00	.50	.75	4 to 7
2.25	.25	.25	4 to 7
2.25	.25	.50	4 to 7
2.25	.25	.75	4 to 7
2.25	.50	.50	4 to 7
2.25	.50	.75	4 to 7
2.25	.75	.50	4 to 7
2.25	.75	.75	4 to 6
2.50	.25	.25	4 to 7
2.55	.25	.50	4 to 7
2.50	.25	.75	4 to 7
2.50	.50	.50	4 to 7
2.50	.50	.75	4 to 7
2.75	.25	.25	4 to 7
2.75	.25	.50	4 to 7
2.75	.25	.75	4 to 7
2.75	.50	.50	4 to 7
2.75	.50	.75	4 to 7
3.00	.25	.25	4 to 7
3.00	.25	.58	4 to 7
3.00	.25	.75	4 to 7
3.00	.50	.25	4 to 7
3.00	.50	.50	4 to 7
3.00	.50	.75	4 to 7
3.50	.25	.50	4 to 7
3.50	.25	.75	4 to 7
3.50	.50	.50	4 to 7
3.50	.50	.75	4 to 7
4.00	.25	.25	4 to 7
4.00	.25	.50	4 to 7
4.00	.25	.75	4 to 7
4.00	.50	.25	4 to 7
4.00	.50	.50	4 to 7
4.00	.50	.75	4 to 7

Home Modification.—The general principles of home modification are the same. What is thought best ought to be used. For example, milk from a herd of cows may be allowed to stand in sterilized glass jars until cream is obtained of the required fat percentage (table v). One must aim at a better method than the old one, of simply diluting and adding cream and sugar.

The difficulties and changes of home modification must be appreciated. One is working with uncertain materials. It is not enough to know the percentage of fat in a cream. One ought also to know the proportion of proteid and sugar. With a given cream it is possible to produce only a given number of changes of proteid. Improper modification of milk may be very unsafe for the patient. The nutritive qualities of the milk may be impaired so that rachitis and other diseases result. This explains the failure of earlier attempts, seeing that the milk varies from day to day. The failure of cream mixtures is due largely to failure to adapt the food to each infant. Usually where proteid digestion is weak it is best to start with a low proteid and increase, rather than predigest. All changes should be made by an experienced hand. The Walker Gordon laboratories supply milk only on the physician's prescription, and a record is sent to the physician every two weeks to remind him of what he has ordered and to let him make the necessary changes.

Whey cream mixtures may be obtained by using whey as a diluent in place of the boiled water, preferably in the combinations containing low proteid percentages. Each 2 ounces of whey replacing the same quantity of water in a 24-ounce mixture will raise the whey-proteid percentage 0.10 and will increase the sugar percentage 0.50. The total sugar percentage is therefore the amount contributed by the cream and fat-free milk, plus that of the whey.

The amount of dry sugar which must be added to make the desired fluid sugar percentage can be easily calculated by reference to the following table:

One measure of dry lactose in a 20-ounce mixture gives 2 per cent. of sugar.
One half measure gives 1 per cent. of sugar.
One quarter measure gives 0.50 per cent. of sugar.
(One measure is approximately one level teaspoonful).

Whey should be made from fat-free milk and should be heated to 150° F. (65° C.) before it is added to the cream mixture, to destroy the enzyme. One quart of fat-free milk will yield about 24 ounces of whey.

TABLE III.

Formulæ on which the Average Healthy Baby may be Started.

	Number.
Premature	1 or 2
Two to four weeks	5, 8, 9. or 11
One to two months	12 or 13
Two to four months	19 or 20
Four to six months	24 or 25
Six to eight months	26 or 27
Eight to nine months	28

TABLE IV.

Partial Limits of Milk Modification which can be Accomplished in the Laboratory.

Table 1.—Low Fats.—Percentages.				
Fat	0.16	0.16	0.16	0.16
Sugar	2.00	3.00	4.50	6–7.00
Proteids	0.75	1.00	2.00	3.00
Table 2.—Low Sugars.				
Sugar	0.68	0.95	1.75	3.40
Fat	2.00	3.00	3.50	4.00
Proteids	0.75	1.00	2.00	4.00
Table 3.				
Proteids	0.18	0.27	0.36	0.40
Fat	2.00	3.00	4.00	4.50
Sugar	2.00	3.00	4–5.00	6–7.00

TABLE V.

One Quart of Whole Milk of 4 Per Cent. Fat will Yield an Average Approximately:

Cream 10 per cent. in the upper	8 ounces after 6	hours.
10 per cent.	11 ounces after 8–12	hours.
11 per cent.	8 ounces after 8	hours.
16 per cent.	6 ounces after 8	hours.
20 per cent.	4 ounces after 46	hours.

DISCUSSION ON DR. ROTCH'S PAPER.

Dr. Ashby (Manchester) said he gathered that by whey proteids Dr. Rotch meant all those left after separation of the curd, some of which are coagulable by heat, some not. Sometimes the same term has been applied simply to the non-coagulable proteid. He also gathered that Dr. Rotch made use of fatless whey. Whey made at home in the usual way from whole milk does contain some fat. A temperature of 150° to 155° F. will destroy the ferment and also, if long continued, microörganisms, but will not coagulate the proteids which we wish to preserve.

Dr. Jules Comby (Paris) said that he was compelled to admire the efforts of Dr. Rotch and his other confreres in America to render cow's milk suitable for the rearing of infants. The modifications which these observers propose are scientific and in accordance with the laws of chemistry and physiology. Nevertheless it is a difficult matter to reach perfection by this road, and mother's milk has been by no means dethroned by milk artificially modified, even though the modifications are rational and scientific. In France, a country which, viewed from this standpoint, is certainly behind the times, the attempts to rear children on modified milks and laboratory milks have not been crowned by success. For his own part he could not commend either Gärtner's milk, humanized milk, or mater milk, which were offered us as chemically identical with woman's. Many infants take and tolerate Gärtner's milk and thrive upon it. Everything goes well for a time; then anemia, pallor and general feebleness appears, and there comes a day when one finds oneself face to face with cachexia and scurvy.

In three cases of infantile scurvy which he had seen,—and for France that was a large number,—the use of Gärtner's milk was clearly the cause of the disease. In 13 cases of Barlow's disease published in France (there were no more), not less than 9 appeared to be due to the use of Gärtner's modified milk. This cannot fail to make us distrustful of laboratory milk. It is probable that the clearly proved rarity of infantile scurvy in France depends upon the very small part played by modified milk in the rearing of infants. Is it solely the modification of the milk that we have to hold responsible for the production of anemia, scurvy and rickets? Is it not rather the fact that sterilization of milk, carried too far, destroys the soluble ferments of the milk at the same time that it kills the microbes, and so converts this living fluid into a dead form of nourishment. This is a matter for discussion.

In the meantime he distrusted preparations similar to those of Gärtner and was disposed to keep to simple dilution of milk with the addition of cream and sugar, without having recourse to excessive heating of the milk, which makes it a preserved rather than a fresh food, as it should be if it is to retain its full value.

To sum up, he held these modified artificial milks responsible for causing anemia, rickets and scurvy, and he noted that the last disease especially is common in the United States and appears to occur in other countries with a frequency directly proportioned to the development in that country of the artificial milk and food industry.

Professor Baginsky (Berlin) said it was interesting that two men living so far apart as Dr. Rotch and himself should have arrived at such similar conclusions as to the modification of milk. He had, in Berlin, made modified milk similar to what Dr. Rotch had made in America, and had pubiished sinister views as to the clothing of the milkers and so on. Again, with regard to milk laboratories, or milk pharmacies, as he had called them, he also suggested physician's prescriptions and the use of sugar-free milk. But although he had reached such similar conclusions he could not follow Dr. Rotch in all that he had said about the use of modified milk. He rather followed his friend, Dr. Comby. If we go further than is necessary we do not know how far to go. It may be very good for children to make such modification, but we must admit also that there are dangers.

Dr. H. de Rothschild (Paris) said he would divide Dr. Rotch's paper into two parts. With one he agreed entirely, not with the other, namely, that referring to the modifying of milk and making more or less complicated mixtures, since he had found that such modifications and dilutions of milk are seldom necessary. Healthy children fed well on pure cow's milk, and sick children can be satisfactorily fed on milk simply slightly diluted. Hence in Paris we think all direct modifications of milk are not very useful, but may be reserved for children with whom pure and diluted milk does not agree. Of such he had seen not more than half a dozen. He was interested in what was said as to keeping cow's milk fresh. For a long time he had been saying that one wants for children very pure milk and milk whose proteids, etc., are known; we must know this if we wish to dilute the milk. In Paris the mother buys the milk and the doctor may say, give the child 2 parts of water and 1 of milk, while he himself does not know how much water the milk-seller has already added. This is where we find the real value of milk laboratories. If he were in New York he would not order formula 16 or 17, but pure milk, and would tell the mother how much water or lime water to add to it. When failures occur it is because we have not pure milk, and we do not know whether it is good or bad, and even the chemist may not be able to tell us. Dairies should certainly be looked after by doctors and not by people who know nothing about such things.

Dr. W. P. Northrup (New York) said the discussion included milk, baby feeding and milk modification. As to milk we are all agreed. It should be pure, sterile and well preserved. The first point about the Walker-Gordon laboratories is that they supply a pure milk. But we cannot trust this to the average mother. She will add things to it on her own account, such as chicken broth. The laboratory means a clean milk. If a few bacteria drop in they do not have a chance to do any work in it for more than ten minutes.

Then with regard to the babies, we cannot regulate the babies, but if we want to feed a sick baby we must regulate the milk to suit, and continue to alter it as the baby changes.

Lastly, as to the modification of milk, he thought that Dr. Rotch's contributions to this subject could only be compared to the introduction of antitoxin and intubation. The hopelessness we felt before we knew about modification can only be compared to the similar hopelessness in such cases. Dr. Rotch has taught us to think in definite figures and to know what we are talking about. We deal with definite facts. He could say that he had not lost one child where modified milk had had a fair chance.

Dr. Carpenter (London) said that he must pay a high tribute to the work of Dr. Rotch. He thought the picture of American cow-sheds, etc., was perfect. He drew a very different picture of what he had observed in this country. He agreed with others who had spoken that the initial requirement was a pure milk. As to the examination of milk, he would ask, where is the money to come from? Is it to be an affair for the state or what?

He had used the Walker-Gordon milk as sold in London. At the Evelina Hospital it had been given to the poor at a very nominal cost, but it was difficult to get them to come for it. Then in private practice there was a very large class who could not pay one pound a week for feeding the baby, and that was about what it came to. Dr. Rotch had stated that the milk could only be procured on the physician's prescription, but that was not the case in London. In some cases he thought the baby could only be saved by the use of a wet-nurse.

Dr. Eric Pritchard (London) said he had tried the Walker-Gordon milk, but he was not entirely satisfied with it, and chiefly because of the difficulty of getting the milk soon enough in urgent cases. It was sometimes 30 hours before the baby could get the milk he had ordered. He preferred therefore a method of home modification. The chief difficulty was to procure a cream of constant richness, but now certain dairies in London had undertaken to supply creams of standard richness, and this should make it a fairly simple matter to carry out a modification sufficient for practical purposes. He thought it was not desirable for percentages to be too exact, because the infant's stomach should be accustomed to a certain amount of variation.

Dr. John Thomson (Edinbugh) said he could not speak with any authority on the subject, because there was no milk laboratory in Edinburgh nor much prospect of one being established. Probably on account of the cooler climate they had much less trouble with digestive disorders in infancy. He agreed as to the importance of pure milk. The conditions under which the milk is procured in Scotland are not satisfactory and the milk is not what it should be.

Dr. Sandwith (Cairo) said that the modification of milk had been compared to the introduction of antitoxin. He would rather compare it to Listerism. On the introduction of Listerism he recognized that surgeons were learning to make use of dairy methods. In Devonshire it had been known long before that if the hands, etc., were not clean the milk would not keep. He thought Dr. Rotch had done as much for pure milk as Lister had done for surgery. Without following Dr. Rotch into details, he thought we ought at least to understand the ABC of his method. Sterility is the first thing; then such modification as the baby requires.

Professor Byers (Belfast) said the discussion was very interesting because it brought out the personal equation of the different speakers. Dr. Rotch had said the problem was a chain of many links. The necessary links were simplicity, Nature's method, and adaptation to each individual child. He thought justice had hardly been done to Professor Rotch, who had given us a plan capable of doing all this. Probably if we could eliminate the people who interfere with the proper methods of feeding we should find that babies, even the babies of different countries, do not differ so much after all. We had had various plans suggested by different speakers, but surely Dr. Rotch's was more scientific, because it suited the different cases we met with in practice. These are the best cases. He thought we must try to understand the American method better. With our falling birth-rate it surely became more and more necessary to do everything possible to save the children who were born. He regarded Professor Rotch's work as constituting one of the greatest advances of modern times.

Dr. Rotch said he would reply very briefly. First as regards modified milk causing disease he could only say that was not their experience in America. He did not think much of Gärtner's method, which was defective. The main point was to be sure of the milk.

As to what Dr. Rothschild had said, pure milk could be ordered in America if required. Modified milk was necessary in cases of disease. If pure milk is sent home to be modified there, bacteria get in right and left. He had not had time to speak at the kind of cases treated—diarrhea, etc. In such cases changes in percentage composition were found practically useful.

As to the laboratories, the name Walker-Gordon does not mean anything, and in London they could not pretend to do all that was done in America. If milk was sent out without a physician's prescription, that was not the case in America. The physicians ought to give the laboratory far more support than they do. They should also impress upon the managers the necessity of providing for rapid transit. That surely could not be a difficulty if its need were recognized.

One speaker had said that a baby did not need to be fed precisely. Very well. If you want variety, give it every day, but know what you are giving and do not trust to haphazard methods.

Then as to the matter of expense, which had been referred to, he could only say that the first thing needed is education of the public. Of course modified milk could not be cheap, but let the public be educated up to it, let them understand its value, let them know what they were paying for and they would have it in preference to milk as at present supplied. That, at least, had been his experience in America.

Discussion on "The Surgery of those Affections of the Cerebrospinal Nervous System which Occur more Especially in Children," opened by Harold J. Stiles, F.R.C.S.E. (Edinburgh), vid. an early issue of Pediatrics.

Mr. R. C. Dun (Liverpool) said that in cases of spina bifida he thought some weeks should be allowed to elapse after birth before operating on account of the tendency to spontaneous cure in certain cases. As to treatment, he preferred excision in all cases. The injection of Norton's fluid is not without danger, and he had three cases in which death rapidly followed its use. As to excision, he regarded antiseptics as dangerous and always used simply boiled water. The slightest injury to the nerve tissues must be avoided. Where paralysis is present he thought it important to get complete separation between nerve tissue and sac.

In tubercular meningitis he was not very hopeful of drainage of the subarachnoid space or ventricles leading to permanent cure. In three cases which he had operated on improvement followed operation but relapse occurred subsequently in each case.

In non-tuberculous meningitis he thought, with Mr. Stiles, that drainage of the subarachnoid space or ventricles offers much more likelihood of success. He had had one case in which the subarachnoid space was drained laterally for an apparently simple meningitis. The child is now perfectly healthy rather more than a year after operation. He preferred to open the skull 1 inch above the auditory meatus rather than employ the occipital route.

In hydrocephalus most benefit is likely to be derived in acquired cases. It seems very doubtful if in congenital cases the brain could develop normally after the severe pressure to which it had been subjected. As regards the operation of draining the ventricles he thought a Reutted chromic catgut tube might give better results than the tubes commonly used. Such tubes can be made with a bend upon them, or branched, in which respects they were an improvement on the decalcified bone tube. (A specimen of the tube was exhibited).

He had had no success in operating for microcephalus.

Mr. Noble Smith (London) spoke of fixation of the spine in Paralysis from Pott's disease and described an economical form of splint made out of hoop iron and lined with ordinary felt fixed to the framework with strips of sticking plaster, which could be used to control the diseased parts. The principles upon which this splint is to be applied consists in holding the shoulders backwards towards the upper part of the splint and retaining these actions by means of a pelvic belt. By this means much greater control of the spine is obtained, the thorax is allowed to expand without any pressure being made on the parts of the chest, and the tendency of the abdomen to protrude can be controlled by binding it with a flannel bandage backwards towards the splint.

The great advantage of being able to supply a splint in the course of a few hours at a small cost must be obvious, and the exact shaping and adjustment of the splint by the surgeon is also a point in favor of its use.

In respect to caries of the spine Mr. Noble Smith emphasized the importance of recumbency as well as the use of friction and splints in all acute cases.

Prof. John Chiene (Edinburgh) complimented Mr. Stiles on his paper and spoke of the treatment of tubercular disease of the spine. He recommended the recumbent position in *acute* cases, and directed attention to the three positions in which patients must lie. In *cervical* cases the weight is applied to the head, the head of the bed is raised, and the body acts as the counterextending force. In *lumbar* cases the foot of the bed is raised, the weight applied to both lower limbs while the body is the counterextending force. In *dorsal* cases, double extension (the bed horizontal) is applied to the head and to the lower extremities.

In *subacute* and *chronic* cases the jacket is used in the lumbar and lower dorsal regions, the pelvis being the fixed point; in disease of the middle and upper dorsal regions and in the lower cervical regions the jacket is the fixed point and the jury-mast attached to the jacket supports the head; in upper cervical disease the fixed point is the shoulders (caused by a broad poroplastic collar) on which rests Fleming's india-rubber collar which supports the head by pressure on the mastoid processes and occipital protruberance. Pain is the indication that the child must resume the recumbent posture. An advance in the projection is a sign of healing of the carious area equivalent to the contraction of an ulcer when healing.

Mr. Collier (London) wished to be dogmatic in the view that in those cases mentioned by Mr. Stiles where, on opening the spinal canal by laminectomy in cases of caries, a caseating focus is seen to be present in the bodies of the vertebræ and to be pressing the cord by flattening the canal, it is advisable to remove this focus by a route which does not traverse the canal itself.

A case of mid-dorsal caries with paraplegia was cited in which operation had been followed by a good result. On opening the canal it was found that the cord was compressed by a swelling which raised the posterior common ligament. The incision was extended and about 2 inches of the posterior ends of two ribs removed, the pleura pushed forwards, and the diseased focus removed from the front and side of the vertebræ, thus preventing the danger of subsequent recurrent compression of the cord by formation, during healing, of cicatricial tissue in the vertebral cases.

Mr. Stiles, in reply, desired to thank the members of the Section for the very kind manner in which they had received his remarks and for the valuable criticism that had fallen from the different speakers. He thought Mr. Dun's idea (a plaited catgut tube) was a good one, but he doubted if much benefit was to be expected from drainage of the lateral ventricles into the subarachnoid space in cases of congenital hydrocephalus where the natural drainage channel was not only patent but enlarged. In acquired cases more benefit might be expected.

He was glad to hear that Mr. Noble Smith advocated the recumbent position in addition to his apparatus, and he quite agreed with Mr. Collier that in certain cases of Pott's paraplegia it was better to attack the disease through the posterior mediastinum rather than through the spinal canal.

Dr. John Thomson (Edinburgh) read a paper on "Defective Coördination as a Factor in the Causation of certain Congenital Malformations. To appear in PEDIATRICS.

Dr. Jules Comby (Paris) said that the theory advanced by Dr. Thomson was a very attractive one and was, moreover, supported by those not infrequent cases which spontaneously recovered without surgical intervention. Cases had been observed in which simple spasm had given rise to the appearance of a congenital hypertrophy of the pylorus or hypertrophy of the colon, etc., which sooner or later disappeared. In some cases the malformation was accounted for by some lesion. For ininstance, Sir Frederick Treves had removed a large part of a hypertrophied and dilated colon in a case in which a stricture of the rectum existed although the patient presented no symptoms but those of Hirschsprung's disease. Whatever the fact might prove to be Dr. Thomson's theory accounted for some very obscure antenatal affections and his hypothesis of a developmental neurosis deserved consideration. (Translation).

Mr. H. J. Stiles (Edinburgh) mentioned that he had operated three days previously on another case of congenital hypertrophy of the pylorus in a child four weeks old, using the method of Dr. Nicoll, and up to the present the case was going on well.

Mr. Collier read a paper upon "An Important Point in the After-Treatment of Erosion of the Knee-Joint." To appear in PEDIATRICS.

Mr. H. J. Stiles (Edinburgh) said he desired to thank Mr. Collier for his interesting communication. He was himself in the habit of excising the knee by Kocher's method. He thought it necessary to divide the crucial ligaments if all the disease was to be removed and having done this he thought it was safe to aim at a rigid joint. After what Mr. Collier had said he would be glad to give his method a trial.

Mr. Jordan Lloyd said he thought it was quite practical to remove all the disease from a tubercular joint. The crucial ligaments had usually to be sacrificed and their removal was not necessarily followed by complete ankylosis. He disapproved of excisions of the knee-joint in children as the after results in his hands had not always been satisfactory.

Mr. Collier said that the disease usually began in the synovial membrane and he thought it was quite possible by operation to remove the whole of the disease. The operation should, at least in hospital practice, be done early. He excised only when the disease was very extensive. He usually found it possible, if he had to remove the anterior crucial ligament, to save the posterior, but not if the disease was very extensive. In such a case he was content if he obtained movement to the extent of 30°. He did not try to increase the amount of movement. His aim was to leave the patella free. Of course, appriate after-treatment was required to prevent flexion.

Mr. Robert Jones (Liverpool) read a paper upon "The Surgical Treatment of Infantile Paralysis," and "A Note upon the Operative Treatment of Flail Paralytic Elbow." To appear in PEDIATRICS.

Mr. Noble Smith (London) said he agreed with Mr. Jones in recommending operation in spastic paralysis. He thought only cases where the mental powers were good and the spasms not extreme should be selected for operation. He referred to the number of cases already recorded in which distinct benefit had resulted from operation followed by careful after-treatment. He described a case of his own which he regarded as typical of those which might be benefited by operation. The child was seven years old and had never walked. After dividing the tendo Achillis of both legs and subsequently the adductors of the thighs the spasms had ceased and the child was able to learn to walk.

Dr. Hawthorne (London) sald he gladly recognized the value of Mr. Jones's paper. He thought a careful selection of cases for operation was very necessary. Some cases were susceptible of improvement without operation and did improve under general measures of hygiene and exercise. Hence he demurred to a general proposal that all spastic paralyses should be swept into the operative net. He was interested to hear that the mental aspect of some patients improved after operation. This was of great interest and importance, as so many of these cases exhibited more or less mental deterioration and there was always some fear that this might develop even in cases where it did not exist.

Mr. Jordan Lloyd said that so far he had been disappointed by his results in cases of spastic paraplegia. He had often seen immediate improvement followed in time by relapse to the former conditions in the many varieties of this disorder. There were doubtless some which might be surgically treated with success, but for the majority nothing could be surgically done. He wished to ask Mr. Jones how far his results had been permanent.

Mr. Jones, in reply, said he wished to emphasize the importance of working at each case with enthusiasm. When operation was resorted to it should be thorough and all obstructing bands divided. When you had a patient that could not, and never could walk, your aim was to allow him to hold his legs apart and stand. Then you must put them in a position for future use. The limbs should be abducted for at least three months, then, the spasm being reduced, he must be trained in the art of walking. Great discrimination should certainly be used in the selection of cases for operation. He had been doing this operation for 25 years and many of his patients were now walking about fairly well. The satisfaction of all in contact with these cases in their improved state was a sufficient proof that the operation did good.

Empyema in Children.

F. J. Cotton, among other conclusions drawn from the data, says that the infection is usually with the pneumococcus. Spontaneous cure, even when aided by tapping, is rare. Operation should not be delayed, as time lost is strength lost, and the issue is largely one of nutrition. The best form of operation is, in general, the subperiosteal resection of an inch of the eighth or ninth rib in the posterior axillary line, the evacuation of pus and fibrin masses, and tube drainage. Irrigation is not usually advisable. The routine after-treatment in fresh cases should be tube drainage, the tube being progressively shortened and removed when the cavity is nearly healed. Where failure to heal seems to depend on failure of the lung to re-expand, treatment by valve or suction apparatus is indicated. The great majority of the cases heal even when the healing is delayed for several months. The closure of the cavity depends mainly on nutrition and on adequate drainage. —*Medical Record.*

ABSTRACTS

A CASE OF EPITHELIOMA OF THE MARGIN OF THE EYELID APPARENTLY CURED BY THE USE OF A SOLUTION OF ADRENALINE CHLORIDE.

Dr. WILBUR B. MARPLE (*Med. Record*, July 23, 1902) reports the following: Six months ago I would have said that I had never seen an eye case which had been permanently benefited by the use of adrenaline. But during the last six months I have seen one case which, so far as I know, is unique, and which is, in some respects, so remarkable as to warrant describing it in extenso. The patient was a married lady, about 45 years of age, in good health, the wife of a business man, referred to me by a fellow practitioner. She was first seen June 5, 1901, and gave the following history: She has had a small growth on the left lower lid, which began about six years ago, in what she thought was a stye at the middle of the lid (her physician said it started apparently as a Meibomian cyst) and this has gradually crept toward the outer canthus. During the past winter it has annoyed her considerably, becoming readily inflamed and bleeding easily, though there has been no pain associated with it at any time. On the occasion of her first visit, the condition was as follows: The border of the left lower lid was the seat of a characteristic epitheliomatous infiltration, extending from the external canthus and reaching beyond the middle of the lid, in all 18 mm. in length. The nodular infiltration at the middle of the lid extended downward 6 mm. and the lid was somewhat notched here. The infiltrated area was more or less red. The nature of the growth was explained to the patient and its removal was advised, which she decided to have done in the autumn after the hot weather was over. A small portion was excised and subjected to a microscopical examination, which revealed the characteristic histological picture of epithelioma. She was given a solution of adrenaline as a placebo to instill into the eye every evening, as the growth looked quite irritated. I saw the patient once more early in July just before she left the city for the summer, when I noted that the growth looked much less irritated. I did not see her again till last January, and was somewhat prepared for what I found by a note received in December from her husband, in which he said that the medicine I had given his wife had cured her entirely. This proved to be almost literally true, for I found along the margin of the lid previously occupied by the epitheliomatous growth a clean indrawn cicatrix with the lashes of course all gone. Only at one spot was there dangling a small shred of the tissue of the growth. The patient reported that she had used the adrenaline (1-1,000) regularly for three months until the end of September. After that irregularly, and had ceased it altogether since Christmas. After she had used the preparation for a month or so she had noticed that little brown scabs or crusts formed on the outer surface of the growth, which fell off either spontaneously or with the least rubbing, as on washing the face. As these little crusts came away the mass became always a little smaller, until it had practically disappeared. During all this time the adrenaline was absolutely the only remedy used in her eye by the patient. To say that I was even more surprised at the result than was the patient is but expressing the truth. I am sure the result is cosmetically better than would have followed the use of the knife. Nothing else was used except the adrenaline, and simultaneously with the commencement of its employment a growth which the patient had had for six years began slowly to disappear. If the adrenaline was responsible for the cure the explanation is not difficult to seek. The nutrition and blood supply of these epitheliomatous masses is very poor, and the bloodlessness following the use of adrenaline apparently acted like a ligature in compressing the vessels, and gradually the most peripheral portions of the mass died and were rubbed off in small scales. This individual was remarkably susceptible, as I accidentally discovered, to the peculiar blanching effect of adrenaline. Whether the result here depended upon a peculiar susceptibility or whether a similar result can always be obtained in such a case, it is impossible to say. I have at present two similar cases under treatment, but they have been under observation only a short time. If a like result is obtained, then we shall have in adrenaline a most valuable curative agent in dealing with such epitheliomatous growths.

GOVERNMENT REPORT ON HOOKWORM DISEASE (UNCINARIASIS OR ANKYLOSTOMIASIS).

At the request of Dr. Walter Wyman, Surgeon-General of the United States Public Health and Marine Hospital Service, Dr. Stiles, Zoologist of the United States Bureau of Animal Industry, has prepared an article, entitled "The Significance of the Recent American Cases of Hookworm Disease (Uncinariasis or Ankylostomiasis) in Man." This article will appear in the forthcoming Annual Report of the Bureau of Animal Industry, but an advance edition of 5,000 reprints will be issued about August 15th for free distribution among physicians. The report covers 37 pages, containing a general discussion of the subject, full description of the parasites involved, with their life-history, also symptoms, methods of infection, preventive measures, treatment, abstracts of cases thus far reported for this country, and a bibliography of American literature on the subject. It is illustrated by 84 text figures of the parasites in different stages, and of the eggs of other parasites which are found in feces and which may lead to errors in diagnosis. There is also a description of the method to be followed in fecal examination. Applications for this publication should be made (preferably upon postal card rather than in letter) to the "Chief of the Bureau of Animal Industry, Washington, D.C.—*American Medicine*.

THE TREATMENT OF FRACTURES AT THE LOWER END OF THE RADIUS.

Dr. Fielding Lewis Taylor, of the Out-Patient Staff of the Hudson Street Hospital, New York, writes as follows in the *Therapeutic Monthly*, April, 1902:

For practical purposes almost all fractures at the lower end of the radius may be embraced by the term Colles's fracture. In its several complicated forms the fragments may be comminuted or impacted; the styloid process of the ulna or its lower end may be broken; the styloid process of the ulna may be compounded; the triangular fibrocartilage of the wrist-joint may be lacerated; the radio-ulnar ligament torn; there may be only an epiphyseal separation of the end of one or of the ends of both bones.

Colles's fracture is marked clinically by its characteristic silver-fork deformity, the styloid process of the radius is higher, as a rule, than it should be, the hand is generally carried toward the radial border and the styloid process of the ulna prominent. When such condition is observed, we make an effort at reduction. This can generally be accomplished without an anesthetic. In many cases traction will suffice, in others traction with direct pressure on the lower fragment is required. In a few cases it may be necessary forcibly to overextend and then sharply flex the lower fragment on the upper in order to loosen up an impaction or disentangle the lower fragment from the soft parts, before pressing it into position while making traction. When reduction has been successful the posterior surface of the radius is almost flat from above downward, while the anterior surface is slightly concave in the same direction, and the styloid process of the radius is lower than that of the ulna. In unsatisfactory cases I have found the fluoroscope of great value for ascertaining the conditions present and enabling me at times to overcome the difficulty. The deformity seldom tends to recur. When there is an actual loss of substance due to crushing, as frequently occurs in the aged, or when there is considerable comminution, or when the radius and ulna are separated by outward displacement of the tendon of the flexor carpi ulnaris, or by other soft structures, complete reduction may be impossible. In such cases a very serviceable, though somewhat unsightly, wrist will result in time, even though the carpal cavity of the radius look slightly backward, the radius be somewhat shortened and the styloid process of the ulna prominent. Perfect reduction greatly hastens union and rapid restoration of function. Much pain and stiffness can be avoided by obtaining it.

Having reduced the deformity, it remains to retain the fragments in position. To accomplish this, I put up the part in a partially prone position, with the wrist slightly extended, in anterior and posterior moulded plaster-splints. The splints extend from the junction of the middle and upper thirds of the forearm to the middle of the palm and middle of the dorsum of the hand respectively. These splints are made with an ordinary plaster bandage which is wide enough to overlap slightly the lateral aspects of the wrist.

The proper length having been ascertained, a plaster bandage is wetted and recurrent layers are superimposed upon a table until the requisite thickness is obtained (Fig. 1). The forearm and hand having been smeared with vaseline, the soft plaster-splints are placed directly upon the skin and moulded accurately to the parts with a few turns of a gauze bandage. The forearm is then placed prone upon a table, with a roller bandage under the palm to maintain flexion, and the plaster allowed to set (Fig. 2). For a few days the patient uses a sling, but he may discard it within a week.

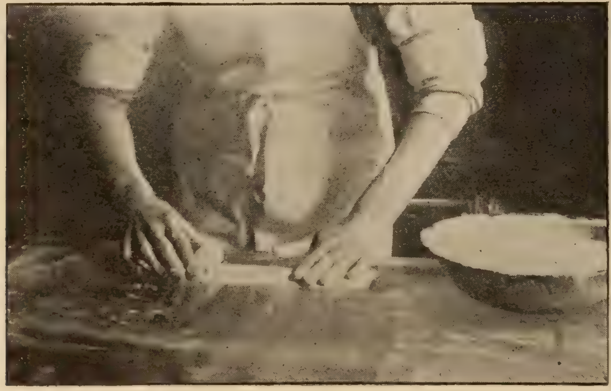

FIG. 1.

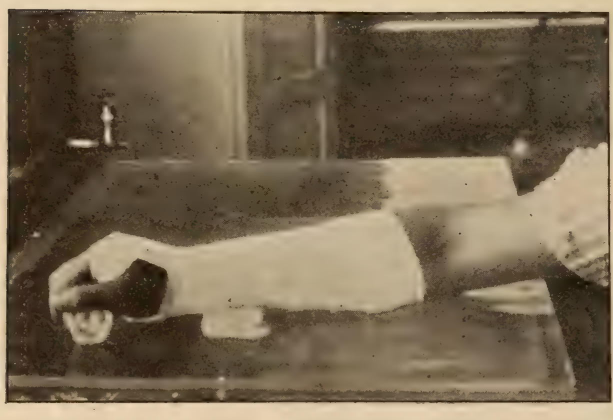

FIG. 2.

The splints may be removed at the end of three or four weeks, depending largely upon the intelligence of the patient. In children and drunkards it is my rule to keep on the splints a week longer than is absolutely necessary, in order to avoid refracture.

The advantages of this mode of dressing are:

1. It may be easily removed to allow massage of the parts. The lower splint may remain in position while the upper one is removed, and vice versa. The older the patient, the more frequently should massage be performed.

2. It allows of perfectly free motion of the finger-joints.

3. It is quite possible for the patient to put his forearm through a coat sleeve, a matter of no small importance from the standpoint of personal convenience.

4. It tends to hold the radius and ulna together and so to prevent the marked spreading of the joint, which is so often seen when the old board-splints are used; it also tends to preserve the normal concavity of the anterior surface of the lower end of the radius (Fig. 3).

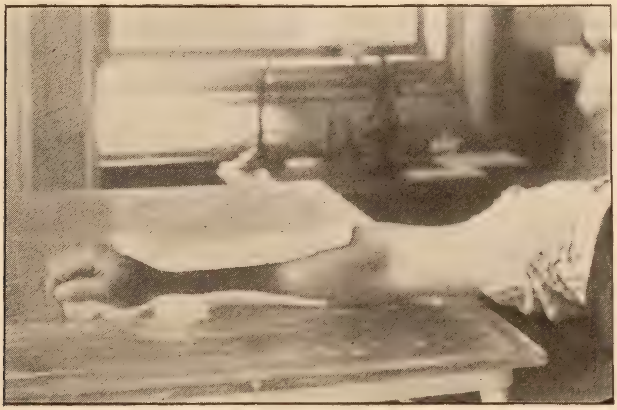

FIG. 3.

5. If massage has been properly carried out, even old and rheumatic patients suffer but slight temporary stiffness of the wrist and fingers, while young subjects do not suffer from this at all.

In cases that have not been treated for three or four weeks after the injury I have in several instances greatly improved the appearance of the wrist by refracture under anesthesia. The callus is not very hard at this time. By bending the lower fragment backward and forward on the upper, it may gradually be mobilized to some extent. Splints padded so as to make proper pressure on the fragments will then assist in correcting the deformity.

Other fractures at the lower end of the radius are rare, and are to be treated on general principles.

CONTAGIOUS OPHTHALMIA IN THE PUBLIC SCHOOLS.

In discussion of trachoma (New York Academy of Medicine, Ophthalmological Section) Dr. Grüning said that the public schools are certainly in a very unfavorable condition as regards contagious ophthalmia. A beginning has been made, however, and already some children are excluded because of the presence of contagious eye disease. It must not be forgotten that the patient may be cured and yet reacquire the disease. The Board of Health should have the power not only to inspect the schools, but to go to the houses whence children come and so secure the stamping out of the disease.

Trachoma is not epidemic in this country, but it is brought here from Russia, Italy and Ireland. Now that attention has been called to it there is no doubt that the Board of Health will proceed to enforce the measures necessary for its limitation. Dr. Pooley said that Dr. Derby's report shows at once the value of inspection and its necessity. Unfortunately discredit is sometimes brought upon school physicians by the occurrence of mistakes of diagnosis. Dr. Pooley has recently had some cases referred to him in which children were dismissed from school for hyperemia of the conjunctiva due to nothing more serious than refractive errors. School inspectors must be competent if they are to exercise the function of dismissing pupils for presumably contagious disease. Dr. Pooley is convinced that the bath houses increase the number of purulent eye diseases every summer. Shortly after the opening of the free baths the number of purulent eye diseases under treatment at various dispensaries begins to increase. The inspection of public baths then is extremely necessary and the Board of Health should give it its attention without delay. Dr. Pooley has seen some very severe cases of purulent conjunctivitis that were to his mind undoubtedly acquired in the public bath. In some cases even gonorrheal ophthalmia has been thus acquired. Dr. Pooley considers it cruel to instil nitrate of silver into the new-born baby's eyes. The infants are not infected during parturition when the eyes are firmly closed, but after birth. The child's first instinctive movement is to dig its fists into its eyes. First of all then the hands and bodies of new-born children must be thoroughly washed. This will prove a much better form of prophylaxis than the overpraised Credé method.—*Medical News*.

PEDIATRICS

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EDITORIAL COMMENTS.

A Brief of Necroscopy

A little volume of this name (*A Brief of Necroscopy, and its Medico-Legal Relation*; New York and London, Funk & Wagnalls Co., 1902) has come recently to our notice. The author is Dr. Gustav Schmitt, of Milwaukee, and there is also a short introduction by Dr. John B. Huber, of New York.

Within the small compass of a pocket compend one cannot of course expect all the information one may need on such a subject, but this volume will prove very useful to any doctor or lawyer who is interested theoretically or practically in medico-legal questions and has no time to search the libraries for needed information.

The book is of pocket-size, leather-covered, and contains 186 pages. There are plates of the cerebral centers, of the apparent origins of the cranial nerves at the base of the brain (with outlines of the arteries), and of the abdominal regions.—Some introductory "Hints and Don'ts" are followed by an elaborate and careful description of how to make a *post-mortem*, the description covering the first seventy pages of the book.—Very condensed notes follow on *post-mortem* Appearances in Poisoning Cases (only the most important poisons being mentioned), on Mortal Injuries, on Death from Asphyxia, on Abortion, Infanticide and Electric Shock.

We feel it rather invidious, where most is valuable and good, to add any criticism. It might be suggested, however, that a

Table of Contents (which is absent) would not only help the reader, but would probably have saved the writer from some confusion of arrangement, and the printer from using the same types to introduce a paragraph that are used to begin a chapter. We also certainly deprecate the "sucking" of a *post-mortem* cut or wound, unless the sucking is done by a mechanical contrivance instead of the lips. We think, too, that the "fatal dose" of the poisons (when such is known) should have been stated under each head. It is the first question that a layman asks when the question of poisoning arises either forensically or in conversation.

Of course, however, judgments must differ in any book in respect of what should be said and what not said, and we are pleased to repeat that, as a whole, this small volume ought to be found extremely helpful. B.

Atresia Vaginae in Young Girls

A recent talk among some New York medical men of large experience on this topic (a talk elicited by the appearance of a typical case of the trouble) disclosed the fact that none of them had ever before personally observed a case,—a case, that is, of complete atresia. This does not, of course, necessarily show that the affection is excessively rare, but it is certainly rarer than text-books might lead us to suppose.

The case in question may perhaps with profit be briefly described. The girl, a young Russian immigrant, had reached her fourteenth year without menstruating. About two weeks before her mother brought her to the clinic the child had begun to suffer with pelvic pains,—severe enough for a few days to affect her appetite and sleep, and afterwards disappearing. Her bowels had been irregular, but not seriously blockaded. Otherwise the history was negative.—Her personal appearance was good, general condition excellent, urine normal. Palpation of the abdomen revealed a tumor in the middle of the pelvis, rounded and slightly fluctuant, also some irregular fecal masses in the descending colon or sigmoid flexure. Rectal examination showed an elongated sausage-shaped tumor lying just in front of the rectum and descending easily when pressure was made on the mass above the pubes. The urethra was normal, while the vagina was entirely imperforate, the hymen being a firm, tough, rough membrane completely occluding the orifice. The examination caused no pain. The mother could not be persuaded of the gravity of the girl's condition, declined operation and took her away.

The treatment in this case therefore cannot be reported. It may be added, however, that it was quite evidently a case in which the uterus itself had yielded to the pressure of the confined fluid and had been converted, doubtless along with the Fallopian tubes, into a part of the cyst-wall. In these cases, inasmuch as the peritoneal ends of the tubes cannot always be relied upon to remain closed, the fluid should be aseptically evacuated a little at a time. This gives the tissues of the uterus and tubes time to contract, and obviates the danger—a danger which had resulted in death in a few reported cases—of septic fluid escaping into the peritoneum. In those cases in which the uterus can be felt as a small "knob" at the summit of the tumor it would probably be safe to make a free crucial incision into the hymen and at once release the occluded menstrual and mucous accumulations. B.

Medical Inspection of Washington, D.C., Schools.

A number of physicians are reported to have offered their services free of charge for the medical inspection of the public schools. The School Commissioner, to whom the offer was made, was compelled to decline the offer for the reason that, under the law, he had not the authority to accept it. An effort was made during the last session of Congress to have a law enacted making such inspection obligatory. This effort was backed by the Medical Association of the District of Columbia, but it failed of passage.—*Med. News.*

ORIGINAL ARTICLES

THE SURGERY OF THOSE AFFECTIONS OF THE CEREBROSPINAL NERVOUS SYSTEM WHICH OCCUR MORE ESPECIALLY IN CHILDREN.

By Harold J. Stiles, F.R.C.S.E., etc.,
Edinburgh, Scotland.

WHEN I was honored by the invitation of the President and other officials of this Section to open the present discussion I must confess I felt some hesitation about undertaking the task, partly on the ground that my personal experience was not sufficiently extensive to enable me to speak with that authority which is expected from the opener of a discussion, and partly also because I felt that the treatment of many of the affections which fall within the scope of our subject has hardly advanced beyond the experimental stage. This latter fact, however, is a strong argument in favor of the President's wisdom in selecting a subject so open to suggestion as well as to discussion.

The improvements in our methods of preventing wound infection have enabled surgeons to display considerable enterprise in the operative treatment of affections of the central nervous system. Many of these affections formerly relegated to the *noli-me-tangeres* are now operated on with comparatively little risk, while others, formerly regarded as purely medical, have come within the province of the surgeon.

The time has now come when we may hope to arrive at a more definite understanding as to the possibilities and limitations of surgical interference in those affections of the nervous system which occur more especially in children.

CONGENITAL AFFECTIONS.

Spina Bifida.—I think it may be fairly claimed that the treatment of this condition has now been placed on the same rational footing as that of the herniæ elsewhere, and that the radical treatment by excision of the sac should take the place of all other methods.

Simple tapping should never be resorted to as a curative procedure, as it is followed by rapid accumulation of the fluid, and if frequently repeated there is apt to be leakage, which leads sooner or later to death from meningitis or exhaustion. Simple tapping is only of value as a palliative measure when the tumor is tense and ulcerated; by withdrawing the fluid perforation may be avoided and time given for the ulcer to heal before proceeding to excision. Leakage may generally be prevented by using a comparatively fine hollow needle, by passing it obliquely through the muscles into the sac and by the application of a collodion dressing.

Apart from excision, injection with Morton's fluid may be said to be the only treatment worth considering. It cannot be denied that this method has been the means of curing many cases of spina bifida, but that it is attended with greater danger than aseptic excision few, I think, who have had experience of both methods will be disposed to deny. Moreover, the cases in which the injection with Morton's fluid is least dangerous are just those where excision is almost uniformly successful. It is well known that it is not always possible to say whether the sac does or does not contain the cord and nerve roots until it has been opened and it is not to be wondered as therefore that injection of Morton's fluid should be attended with grave risk. It has been shown by Hildebrand and Muscatello that myelocystoceles are more common than is usually supposed and that they have frequently been mistaken for simple meningoceles. Very probably therefore some of the deaths from convulsions after the injection of Morton's fluid in the cases diagnosed as meningoceles were in reality myelocystoceles. Personally I have only adopted Morton's method in three cases, two of which died of convulsions within 24 hours after operation.

On looking back upon these cases in the light of our present knowledge I am satisfied that better results would have been obtained by excision since the tumors were neither large nor ulcerated. My opinion now is that the treatment of spina bifida by Morton's fluid is only justifiable in ulcerated cases where perforation is imminent.

Although a large number of excisions of spina bifida have been reported, it is difficult to arrive at the mortality attending the operation for the obvious reason that the unsuccessful cases are seldom published. The only way we can arrive at a true estimate of the immediate and remote results of the operation is by authors publishing all the cases they have operated on, along with a note of the anatomical as well as the clinical characters of the tumor; and it would be well also to append a note of the cases whih were deemed unsuitable for operation. The remote results are still more difficult to obtain, as sufficient time has hardly elapsed since the radical treatment (introduced by Mayo Robson in 1892) has come to be generally employed. The most reliable statistics are those of Mayo Robson and Hildebrand. From the table appended to Mr. Mayo Robson's valuable paper in the *Annals of Surgery* for 1895, it will be seen that between October 1882 and October 1892 he performed 20 excisions with 5 deaths.

Hildebrand has collected 87 excisions with 64 recoveries (73.5 per cent.), and 23 deaths (26.5 per cent.). Of the 18 cases which have come under my care, 12 were excised, 3 were treated by injection of Morton's fluid, 1 by incision and packing with iodoform worsted (died), 1 by repeated tapping (died), while the remaining case died a few days after admission to hospital from meningitis, the result of ulceration and perforation of the sac. Of the 12 excisions, 8 (66.6 per cent.) left the hospital apparently cured; but I have since ascertained that one of them, a large dorso-lumbar myelomeningocele, died a few months later of hydrocephalus. All the four unsuccessful cases of excision were lumbo-sacral myelomeningoceles and in all death took place between the nineteenth and twenty-ninth day after operation from septic meningitis following leakage of cerebrospinal fluid.

What are the factors which should influence us in selecting or rejecting cases for operation?

1. The anatomical variety of the tumor. De Ruyter, as the result of his experience derived from Bergmann's clinic, from 1885 to 1888, came to the conclusion that excision should be undertaken only in meningoceles. The later experience of Bayer, Hildebrand, Nicoll, and I think I may now add, surgeons generally, have shown that myelocystomeningoceles, and the majority of myelomeningoceles may also be successfully dealt with by excision.

Hildebrand has shown that myelocystoceles are not so rare as Recklinghausen supposed, and that they are by no means necessarily associated with paralysis or other serious deformities. Out of 13 cases operated on at the Göttingen clinic, 3 were myelocystoceles, 2 of which recovered; the third had slight paralysis of one leg, the result of an accident at the operation. The absence of paralysis before and after excision is explained by the fact that the medullary lining of the sac is formed merely by a thinned out diverticulum of the dorsal wall of the spinal cord; this medullary layer has frequently no functional importance and may therefore be removed along with the rest of the sac, just as if one were operating on a simple meningocele.

In the myelocystomeningoceles the myelocyst is found projecting from the spinal orifice into the cystic meningeal cavity, and when small it may be pushed back into the spinal canal in the same way that the cerebral contents of a meningo-encephalocele may sometimes be reduced into the cranial cavity.

In a case of cervico-dorsal myelocystomeningocele which I recently successfully excised I found that the cavity between the pia covering the myelocyst and the arachnoid lining of the integuments (the dura being absent in this case) was crossed by a number of delicate and anastomosing cords. It was not until after I had discovered the myelocyst that I was able to satisfy myself that these cords were not nerve-roots and that they could therefore be removed without risk. I mention this case in order to impress upon those who are about to operate on spina bifida the importance of making themselves familiar with the anatomy of the different varieties. The subject is a very interesting one and those who desire to study it should consult the monographs, more especially of Recklinghausen, Hildebrand and Muscatello.

In myelomeningoceles the difficulty of the operation depends largely on the extent and degree of adhesion of the cord and nerve-roots to the interior of the sac. It should be borne in mind that the presence of nerve elements in the sac cannot always be made out clinically even by the aid of transillumination. Hence at the operation the interior of the sac should always be carefully examined before it is removed.

In the variety of myelomeningoceles, known as myelocele, the cord in the region of the spina bifida, as Recklinghausen has shown, is arrested in its development before reaching the stage of a primitive medullary tube, and lies exposed upon the most prominent part of the wall of the sac where it is represented by a more or less elliptical area (area medullo-vasculosa of Recklinghausen), consisting of a flattened band of vascular neuroglia containing a few ganglion cells. The outer surface of this area, before it becomes covered by an inflammatory exudation, presents a reddish-brown granular or velvety appearance and possesses at its extremities two grooves at the bottom of each of which is a small opening leading into the central canal of the cord. The epidermis, the bone, the arachnoid and pia, as well as the dura, are all deficient dorsally. The undeveloped spinal cord, which gives origin to the rudimentary anterior and posterior nerve-roots from its ventral aspect is herniated backwards by an accumulation of fluid in the ventral subarachnoid space.

I have referred somewhat in detail to the anatomy of this form of spina bifida to show the folly of subjecting it to operaation. Bayer has attempted to deal with it by preserving the medullary area of the sac and covering it over with two flaps derived from the fully developed skin at the base of the tumor. But, as pointed out by Muscatello, the exposed medullary area is an infected surface, so that such an infant whether operated on or not invariably dies of septic meningitis within a few days of birth, a result which is not to be regretted, as such an imperfect development of the spinal cord is of necessity associated with paralysis of the lower extremities and sphincters, and frequently also with other serious malformations.

Malformations.—If this variety of spina bifida be recognized at birth it is safe to prognosticate an early death of the infant, whereas in the other forms the practitioner should be very careful in committing himself as to the length of time the child may survive, since it is wonderful how long an infant may live with a large thin-walled spina bifida, provided it be carefully protected and kept free from ulceration.

2. The Association of Hydrocephalus and Spina Bifida.

While I do not know of any case where the excision of spina bifida brought about the cure of a coexisting hydrocephalus, it is a well known fact that hydrocephalus not infrequently declares itself after the spina bifida has been operated on, and appaently cured. If the chronic hydrocephalus is to be regarded as essentially a developmental anomaly, then it is not surprising that the two conditions should occasionally be associated, and my own impression is that in those cases in which the hydrocephalus appears to follow the operation upon the spina bifida, the ventricles are already dilated at the time of operation, and in support of this view I may refer to the case of an infant at present under my care with a lumbosacral spina bifida, in whom the head, although not enlarged, is soft and fluctuating.

It is only right, however, to state that Muscatello, who has gone carefully into this question, is of the opinion that the hydrocephalus following excision of the spina bifida is due, in many instances, to the spread of an inflammatory condition originating in the spinal wound, while in other cases it is due to syphilis. If we hold the view that congenital hydrocephalus is incurable then it seems to me that the coexistence of that affection with spina bifida constitutes a definite contraindication to operation.

It is to be hoped that by following up our cases we may obtain more definite information regarding the frequency with which hydrocephalus coexists with, or follows upon, spina bifida.

3 How far is Paralysis to be Regarded as Contraindicating Operation?

On this important question there appears to be some difference of opinion, and personally I shall be glad to hear the views of the meeting on the matter. Bayer, who formerly operated in spite of the paralysis, now regards it as a contraindication to operation. If the paralysis be due to imperfect development of the nervous elements operation cannot be expected to have any beneficial effect upon it. Most surgeons will, I think, agree that it is the reverse of humane to preserve life in such conditions. Mr. Nicoll, who has had great success and experience in the treatment of spina bifida, has recently reported that in some of his cases the paralysis has gradually disappeared after operation. Such being the case, it is evident that in some instances the paralysis is due simply to tension of the nervous elements rather than to their imperfect development. Personally I would be inclined to operate on cases with partial paralysis, but to reject those in which there is complete paralysis of the lower extremities and sphincters, particularly if talipes exists as well.

Operation is contraindicated also when the base of the tumor is so large and the skin over it so thin that it is impossible to get a sufficiently sound skin to close the wound. By prolonging the incision for some distance above and below the base of the tumor and by undercutting the skin flaps well out on to the loin and buttocks, it is surprising, thanks to the distensibility of the skin, what a large raw surface can be covered.

4. Age of the Patient.

When possible it is better to delay the operation until the child is a few months old, but if the tumor is enlarging rapidly and is threatening to ulcerate or perforate, the operation must be performed no matter how young the child. The more I operate upon children the more I am convinced that the danger of performing even major operations on very young children has been much exaggerated, and here I would take the opportunity of stating that it is my firm conviction that apart from sepsis, carbolic acid plays an important part in bringing about a fatal issue.

5. Ulceration of the Tumor.

This complication, which is common in young infants when the tumor is situated in the neighborhood of the lumbo-sacral region, must be remedied before proceeding to excision, otherwise the risk of wound infection and meningitis is very great. Fortunately the ulceration is very superficial, so that cicatrization is readily brought about by careful nursing and the application of a suitable dressing.

In those cases in which ulceration has gone on to perforation and septic infection a successful result by operation is practically hopeless. All we can do is to apply antiseptic dressings in the hope that the inflammation may remain limited to the tumor and bring about "a natural cure" by adhesive inflammation. Or Morton's fluid may be injected in the hope that by its antiseptic properties it may combat the infection and bring about the same favorable result.

Operation of Excision.

The operation of excision of spina bifida as performed today is practically that originally introduced by Mr. Mayo Robson, with the addition of some details which have been added with the object of preserving the nerve structures should they be present in the sac. It will suffice if I merely mention a few details which, in my opinion, contribute towards the success of the operation:

1. Shock may be lessened by the administration of a saline and brandy enema shortly before operation, and by elevating the pelvis so as to prevent any further escape of cerebrospinal fluid after the sac has once been emptied.

2. When the base of the tumor is broad an elliptical incision in the long axis of the spine is better than one at right angles to it and better than a horse-shoe incision, because the two flaps may have to be extensively undercut, and this is much more readily done in the lateral direction.

3. The dissection of the flaps from the base of the tumor is facilitated by keeping close to the thickened arachnoid (the dura being almost invariably absent) from which they can be separated by a blunt instrument.

4. The sac should never be cut away without first opening into it to see if it contains nerve structures. If the tumor be found to be a meningocele, a myelocystocele, or a myelocystomeningocele, the sac may be excised, and the neck, according to its size, either ligatured or sutured.

5. If the sac contains the cord and nerve-roots, these must be carefully preserved. If they are adherent to the sac and cannot be detached, they must be returned into the canal along with strips of the arachnoid to which they are adherent; if this is not possible the inner surface be must scored and roughened according to the method recommended by Nicoll.

6. In suturing the skin-flaps over the cleft they should be everted in such a way as to bring not only their edges but a considerable area of their deep surfaces in contact; this is done by introducing a row of deep mattress sutures (silkworm gut) and to prevent them cutting through the skin in cases where there is tension the loop should be threaded on either side with a piece of rubber tubing. This method of suturing possesses the double advantage of diminishing the chance of escape of cerebrospinal fluid and of providing a firmer cicatrix.

7. A collodion or dry aseptic dressing should be employed and the child for the first few days should be kept in the prone position with the pelvis elevated; needless to say careful nursing is most important.

Of the various procedures which have been employed with the object of obtaining a firmer closure of the deficiency in the spine the only one which is worthy of consideration is that of Bayer, who dissects up from the erector spinæ muscles two flaps which are folded over towards the middle line and sutured so that the aponeurotic surfaces of the flaps are directed towards the spina.

I have adopted this method in cases in which I felt that the membranes and subcutaneous tissues were too scanty to afford a sufficiently good covering, and I have been well satisfied with the result. All the other methods, viz., the chiseling through and wrenching inwards of what remains of the laminæ, the separation of periosteum from the ileum, the grafting of bone either from the human subject or from the rabbit, in my opinion, besides being quite unnecessary, add to the gravity of an already severe operation.

Cranial Meningoceles, Encephaloceles and Hydrocephaloceles.

These conditions, which are much rarer than the analogous spinal abnormalities, are met with in the fronto-nasal and naso-orbital regions anteriorly and in the occipital region posteriorly. The commonest form is the hydrencephalocele, which corresponds to the myelocystocele variety of spina bifida, the cavity of the sac being, according to its situation, a diverticulum either from the lateral ventricle or from the fourth ventricle. In the meningo-encephalocele the sac is lined by thickened arachnoid (the dura being absent) and projecting into it through the osseous deficiency in the cranial box is the encephalocele, which varies considerably in size and consists, for the most part, of imperfectly developed brain tissue covered by an edematous and vascular pia.

Clinically it is not always possible to distinguish between a meningo-encephalocele and a pure meningocele; indeed it is quite impossible when the sac is large and the brain protrusion small. Beck reports two cases diagnosed as pure meningoceles in which the X-rays revealed a shadow corresponding to the prolapsed cerebral tissue.

In removing these tumors, which are often as large as, or even larger, than a child's head, the same principle is to be adopted as in excising the spina bifida. After dissecting up the skin flaps from the neck of the tumor, the meningeal pedicle, if narrow, is simply ligatured, the tumor removed, and the skin-flaps brought over the stump and sutured. When the neck is wider the sac should be opened and the contents examined. Should a small cephalocele project into the sac it may often be reduced, while if it be large and irreducible it must be ligatured and removed. Contrary to what has been said in regard to spina bifida it is desirable to cover over the osseous defect in the skull with a pedunculated flap consisting of pericranium and a thin layer of the subjacent osseous tissue derived from the adjacent bone.

That the immediate danger attending the removal of these tumors is not great is evident from the number of successful cases which have been reported. Of the four cases operated upon by myself, one an occipital encephalocele, died three weeks after operation from septic meningitis following leakage of cerebrospinal fluid. In two of the successful cases the tumors (both occipital meningo-encephaloceles) were larger than the child's head. On enquiring, however, into the subsequent history of these cases I found that both died, the one six weeks after operation from meningitis, the other three weeks after from hydrocephalus, of which it already showed signs at the operation. On reading through the reports of cases, the histories of which have been followed up after operation, one cannot help coming to the conclusion that the ultimate prognosis, except in the case of simple meningoceles and some frontal hydrencephaloceles, is anything but encouraging. Many die sooner or later of hydrocephalus; indeed Bergmann is of the opinion that all these anomalies are due to early antenatal hydrocephalus, and that the simple meningoceles are due to the subsequent arrest of the hydrocephalus and retraction of the previously existing encephalic protrusion. It becomes a question therefore whether many of the cases operated on should not rather be left alone. Operation is, at any rate, contraindicated when hydrocephalus or optic atrophy exists; and Bergmann points out that operation should not be attempted in those cases of occipital encephalocele in which the defect in the skull is situated below the external occipital protuberance.

Congenital Internal Hydrocephalus.

Much energy and ingenuity has in recent years been displayed by surgeons in the attempt to cure this distressing affection. Repeated tapping (with or without compression of the head); intermittent or continued capillary drainage of the lateral ventricles; drainage into the loose cellular area beneath the occipito frontalis (Mikulicz); intermittent and continuous lumbar drainage; capillary drainage into the subarachnoid space (Sutherland and Watson-Cheyne); injection of Morton's fluid; repeated and more or less complete evacuation of the fluid by tapping and simultaneous introduction of aseptic air (Ewart and Dickinson); and drainage from the spinal canal into the peritoneal cavity, have all been tried with, I fear it must be admitted, only partial and temporary benefit. It is true that a few cases have been recorded in which recovery has followed simple tapping, but it must not be forgotten that a natural arrest of the disease occasionally although very rarely occurs.

Of all the above methods of treatment, that introduced by Sutherland and Cheyne (based upon the experiments of Dr. Leonard Hill on the regulation of the cerebrospinal pressure by absorption of and exudation from the veins in the cerebral membranes) seems to offer some prospect of success, but no case, as far as I am aware, has been cured by it. Mr. Cheyne suggests that in those conditions in which "the brain has developed well and the internal hydrocephalus develops at a later period, the case is more hopeful," and he is inclined to attribute the unsuccessful result of his method to "blocking of the capillary drain by the brain substance which becomes squeezed in between a strand of catgut." He refers to a case in which Mr. Ballance obtained an excellent result by using an india rubber tube in place of catgut, but unfortunately here again the benefit was only temporary. Mr. Cheyne intends in future to use a decalcified drainage tube filled with strands of catgut and he hopes that by this means, as absorption of the drainage tube and catgut goes on, lymph channels will be formed which will suffice to keep up the communication between the ventricles and the subdural space. Instead of catgut I have used three strands of horse-hair, with the result that a temporary improvement was obtained but the head enlarged again later and the child died nine months after the operation. I have had no experience of the ingenious methods of treatment introduced by Drs. Ewart and Dickinson and first brought to notice in a communication made before this Section last year.

The last method which I have myself tried is that of establishing indirectly a drain between the ventricles and the peritoneal cavity by passing a few strands of horse-hair from the subdural space in the lumbar region under the erector spinæ muscle into the peritoneal cavity just exterior to the dorsal colon. The operation was performed as follows:

After removing the spinal laminæ of the third lumbar vertebra and opening the dura, three strands of horse-hair, knotted together at their ends, were stitched in position inside the dura, after which the latter was closed. A second incision was then made a little external to the left erector spinæ muscle, and after dividing the muscles and transversalis fascia, the peritoneum was exposed and opened just outside the descending colon. A pair of sinus forceps were then passed under the erector spinæ as far as the spinal canal, where the ends of the horse-hair were grasped, drawn through the tunnel under the erector spinæ and then introduced through the opening of the peritoneum into the abdominal cavity. Both wounds were then closed in the usual way. Unfortunately I had no opportunity of judging of the value of this method, as the child died a few days later of cerebral meningitis, the result of leakage and sepsis following a previous tapping of the ventricles. The operation is a comparatively simple one, and I am inclined to give it a further trial.

I trust I may be taking too pessimistic a view of the treatment of congenital hydrocephalus, but I must confess that personally I do not think we can hope for any permanent benefit from surgical interference. I have made careful dissections of congenital hydrocephalic brains (hardened in situ by injecting the carotids with formalin) and have not been able to discover any evidence that the condition was inflammatory. All the evidence seems to me to point in the direction of the affection being due to an arrest of development, affecting more especially the hemisphere vesicles, the condition being somewhat analogous to a posterior myelocystocele of the cord.

There is another point in the anatomy of congenital hydrocephalus which must be mentioned, and that is, that the aqueduct of Sylvius, the fourth ventricle and the foramina in the pia covering the roof of the fourth ventricle are all dilated so that there is nothing to hinder the escape of fluid from the ventricular system into the subarachnoid space. Hence it would appear that the accumulation of cerebrospinal fluid in hydrocephalus is due to hypersecretion rather than to defective absorption; and if this be so we should have more chance of success if we could check the hypersecretion. Unfortunately, however, the injection of substances which tend to do this (Morton's fluid for example) would have a disastrous effect if used of a strength sufficient to bring about this end.

Microcephalus.

The operative treatment of this affection forms one of the most disappointing chapters in the history of the surgery of the central nervous system. On the supposition that idiocy associated with microcephalus was due to arrest of development of the brain secondary to premature synostosis of the sutures, Lannelongue, in 1890, recommended and performed the operation, which he termed linear craniectomy. The object of this operation was to produce artificial sutures which would take the place of those prematurely ossified and so allow of the further growth and development of the brain. It has been shown, however, that microcephalus may be associated with a variety of morbid conditions either of the brain or its membranes; and even in the rare instances in which it is accompanied by premature synostosis, the evidence, as Bourneville has shown, points strongly in favor of the arrest of the development of the brain being the primary condition. Moreover, in several cases in which post-mortems have been made some months after Lannelongue's operation, it has been shown that more or less complete ossification has occurred along the lines of the artificial sutures. To prevent this Kocher divides the dura and recommends a circular craniotomy, which was, I believe, first performed by Dumont at his suggestion.

At the request of the mother and her medical attendant I recently performed this operation on a child aged 2 years and 3 months, who presented in a very marked degree all the physical and mental characteristics of a typical microcephalic idiot. The circumference of the head was 14½ inches, the bitemporal diameter 2¾ inches, the biparietal 3½ inches and the fronto-occipital 5⅜ inches. Tho steps of the operation were as follows:

1. Incision along the middle line of the scalp from upper part of forehead to posterior pole of skull.

2. Left half of scalp reflected downwards, the pericranium being left in situ.

3. Skull trephined a little above base of mastoid process.

4. A strip of bone 1 cm. wide removed with Hoffman's forceps along the whole of the left half of the greatest horizontal circumference of the cranium.

5. Dura divided for a corresponding extent, two narrow bridges being left undivided, the one containing the anterior

and the other the posterior branch of the middle meningeal artery.

6. Scalp replaced and sutured.

The shock was not alarming. On the second day after the operation the child was sitting up in bed playing with a toy. Cerebrospinal fluid escaped from the anterior end of the wound for a fortnight. Eight weeks later a similar operation was performed on the opposite side of the cranium.

The stereoscopic photographs, which I have brought for your inspection, were taken by my assistant, Dr. Paul, the day before the second operation, that is to say eight weeks after the first operation. They show very clearly that the half of the cranium on the side operated on is already considerably larger than that of the opposite side, and palpation showed that this enlargement was certainly not due to edema of the scalp; presumably therefore it was due to enlargement of the corresponding hemisphere, and a distinct gutter could be felt where the bone had been removed.

The mother, who is devoted to the child, is confident that she notices an improvement in the mental condition, but I must confess I cannot agree with her, and I fear that in her case " the wish is father to the thought." Any improvement that may exist can, I think, quite well be accounted for by the fact that the child is older, and that she has received more than her ordinary share of care and attention; indeed this case has gone far to convince me of the fallacy of the improvements which have been published within a few months of the operation. Although several years have elapsed since the earlier cases were reported on, it is a significant fact that, as far as I am aware, not one of them has since been reported as cured.

Piltz has collated in tabular form a list of all the published operations of craniectomy for microcephalus which have been performed up to 1899. The number amounts to no less than 203 cases, with a mortality of 17.24 per cent. In 36.4 per cent. the result of the operation was negative, while in 38.4 per cent. improvement was stated to have resulted. But Piltz found that the majority of the reports were published within one or two months after the operation.

Some of the cases operated on by Lannelongue and reported by him after operation as improved have since been examined post-mortem by Bourneville, who found that the sutures had not been prematurely ossified, that the artificial sutures had become ossified, that the brains showed marked arrest of development, and that the physical condition had not been benefited by the operation. After some years, observation Czerny, Blanc and Concetti, have been obliged to confess that in all of the cases operated on by them the result has been negative. Most surgeons will, I think, agree with the conclusions arrived at by Piltz, viz., that the operation is founded on false suppositions and on insufficient knowledge of the pathological anatomy of microcephalus. The operation, says Piltz, is not to be thought of in simple idiocy, but it may be performed with a certain amount of justification in those cases where along with the idiocy there are present nervous disturbances which may be regarded as proceeding from local irritation of the lesion of the brain.

Tuberculous Meningitis.

The success which followed the treatment of tuberculous peritonitis by laparotomy, very naturally and with every justification, encouraged surgeons to adopt a similar line of treatment in tuberculous meningitis.

Trephining alone; trephining with tapping or drainage of the lateral ventricle; of the posterior subarachnoid space in the sylvian region; lumbar puncture with the injection of sterilized air, have all had their turn. In the majority of instances a temporary improvement has resulted from each of these procedures, but it is very doubtful if an actual cure has ever been obtained. In none of the four cases, reported respectively by Gowers, Ord and Waterhouse, Mayo-Robson, and Kerr, can it be said that the condition was proved by bacteriological examination to be tuberculous. It is only natural that the above operative procedures should relieve the symptoms caused by an increased intracranial tension, which results from an inflammatory effusion into the ventricle and subarachnoid space. But unfortunately the spread of the tubercle in the perivascular sheaths leads to thrombosis of the vessels, which gives rise to edema of the pia and degenerative softening of the vital parts at the base of the brain. It is this part of the morbid process which surgical interference is powerless to combat.

My present attitude with regard to the operative treatment of tubercular meningitis is, that while I would not recommend operation I would not refuse to resort to it if asked to do so in exceptional circumstances. Operation is not to be recommended when the diagnosis of tubercular meningitis is certain but if any doubt exists then an operation should be performed on the ground that no harm is done if the disease be tuberculous, whereas operation may save the patient should a cerebral lesion be present which is non-tuberculous.

In illustration of this I may refer shortly to the case of a boy, aged 12 years, who was admitted into the Royal Edinburgh Hospital for Sick Children, in a semi-conscious condition with partial left hemiplegia. The day before admission the patient complained of headache, and it was noticed at school that he was somewhat stupid and unable to do his sums. At 5 o'clock the same afternoon he took a convulsion, which was followed by eight others between that hour and 2 o'clock the following morning. In the intervals of the seizures he was semiconscious. There was no history of injury, and no bruising of the scalp. It was thought he might be suffering from an aberrant form of tuberculous meningitis, but as the history was rather against this, and as the paralysis had become more pronounced, he was trephined on the fifth day over the right motor area. On dividing the dura the intracranial tension was so great that the cortical substance bulged through the opening forming a hemispherical protrusion which ruptured spontaneously. The opening of the bone was enlarged as rapidly as possible. On introducing a director into the rent in the brain some dark blood-clot escaped, and on inserting the finger a further quantity of clot was felt deep down in the substance of the brain and evidently involving the lateral ventricle. The clots, which were removed with a lithotomy scoop, were very dark in color and evidently a few days old. The following day the patient was quite conscious. A large hernia cerebri developed and for several days there was a copious flow of the cerebrospinal fluid. The hernia gradually lessened, and two months after the operation the patient was able to walk without much difficulty. Four months later the paralysis of the face and leg had practically disappeared, but the hand and forearm remained partially paralyzed. At the time of operation it was thought that the condition might possibly be due to hemorrhage into glioma, but the subsequent history shows that we had to do with one of those rare cases of apoplexy in childhood. There was no history of congenital syphilis. It is to be regretted that lumbar puncture was not performed previous to operating, as it would have been interesting to have seen if the fluid withdrawn was blood-stained.

I examined the patient again about a week ago (one year and eight months after the operation) and ascertained that he was in the sixth standard of the Higher Grade Board School. He looked, and expressed himself as feeling, perfectly well, and said he could endure mental work and physical fatigue just as well as his school-fellows. He was not troubled with headache, nor did he complain of giddiness on stooping or suddenly raising from the recumbent to the erect position. He complained, however, of slight discomfort on stooping, in consequence of the bulging of the brain and its pressure against the edge of the osseous deficiency in the skull which measured 3½ x 2½ inches. There was no sign of ossification, and pressure with the hand over the soft and somewhat depressed area caused no discomfort. He wears a celluloid plate as a protection to the brain.

I mention these facts as they support Kocher's view, that not only are such deficiencies unattended with unpleasant symptoms, but by acting as a safety valve they compensate for those sudden disturbances of the circulation of the cerebrospinal pressure, which, according to him, play such an important part in the causation of epileptic seizures.

Non-Tuberculous Posterior Basic Meningitis.

Whether or not this disease is to be regarded as a sporadic form of cerebrospinal fever, and whether or not the diplococcus of Still is to be regarded as similar to the diplococcus intracellularis meningitidis of Weichselbaum, I leave to the physicians and bacteriologists to decide.

The careful observations of Drs. Lee, Barlow and Bruce have made us familiar with the morbid anatomy of the disease and have shown us how the inflammatory exudation about the posterior subarachnoid cistern and its neighborhood leads to hydrocephalus by blockade of the drainage channel between the lateral ventricles and the subarachnoid space. When the ependyma of the lateral ventricles is not involved in the inflammatory process there is merely a retention of the normal cerebrospinal fluid, but when, as generally happens, the inflammatory process extends to the ependyma, the fluid in the ventricles is either turbid, seropurulent or purulent. In many of the cases the spinal membranes are involved as well.

What we are especially concerned with today is the surgical aspect of the disease. Is surgical interference desirable?

If so, under what circumstances and what are the procedures to be adopted? The first difficulty we are met with as regards the advisability of operation, is, that many recoveries occur under medical treatment alone, and among them not infrequently severe cases in which such a happy issue was hardly to be expected. In 13, possibly 15, out of the 94 cases observed by Lee and Barlow, recovery was complete. Death occurred in 50 per cent. In the remainder (35 per cent.) the recovery was incomplete, as evidenced by drowsiness with irritability and more or less mental defect, combined often with blindness and, more rarely, with deafness. These symptoms are generally associated with acquired hydrocephalus.

In young children there may be an obvious enlargement of the head, in others merely slight enlargement and bulging of the anterior fontanelle, while in older children the ventricles may be dilated without there being any enlargement of the head. The fact that a fair proportion of cases of non-tuberculous basic meningitis recover seems to me to be an argument in favor of surgical interference rather than against it, provided, of course, that such interference is, *per se*, free from danger. That this is practically the case with lumbar puncture has been proved; and as regards its technique, it matters not whether the puncture be made through the third or fourth inter-lumbar space, as originally advised by Quincke or through the lumbo-sacral space, as recommended by Chilault. All are agreed as to the diagnostic value of this procedure, but it is difficult to form an estimate of its therapeutic value. Lenhartz reports the case of a boy who recovered from a severe attack of cerebrospinal meningitis in whom, in his opinion, lumbar puncture undoubtedly brought about a favorable result. At the first puncture seropurulent fluid spurted out. At the second a pressure of 500 mm. was recorded. About 30 ccm. was withdrawn at each puncture and on each occasion the intra-lumbar diplococcus of Weichselbaum was identified. Hand, in a critical summary of the literature on the diagnostic and therapeutic valne of lumbar puncture, comes to the conclusion that it helps to bring about recovery in epidemic cerebro-spinal meningitis. Kohts, too, while he admits that lumbar puncture produces merely a temporary improvement in tubercular meningitis, is of the opinion that it is of decided value in suppurative cerebrospinal meningitis.

In cases in which the inflammatory exudation in the spinal subdural space becomes progressively more turbid, or in which it is actually purulent, it appears to me that the proper treatment is to follow the procedure which has been carried out successfully by Rolleston and Allingham in a case of sporadic cerebrospinal fever in an adult. In this case Mr. Allingham established drainage by incising the dura after removing the spines and laminæ of the seventh and eighth dorsal vertebræ.

Another surgical means we have at our disposal is puncture of the lateral ventricles. I cannot help thinking that this procedure has not been employed to the extent to which it deserves. I see no reason why it should not, along with lumbar puncture, be resorted to systematically, and at an early stage of disease. If, as so often happens, the drainage route between the lateral ventricle and the subarachnoid space of the cord be blocked, then lumbar puncture alone can have no effect upon the ventricles. Why not therefore puncture the ventricles as well? The operation is a perfectly simple and safe one, provided the exploring syringe and the skin be carefully purified. In infants the puncture is most conveniently made at the outer edge of the anterior fontanelle about 1 inch from the middle line. In older children also in whom the fontanelle is closed Kocher recommends puncture at a corresponding site which he regards as preferable to that employed by Keen, because, should drainage be deemed advisable, the orifice of the tube in the former situation is not so liable to become blocked by the wall of the ventricle falling against it. If the fontanelle be closed the technique of the operation is very simple, if we adopt the plan introduced by Dr. Albert Kocher for injecting antitetanic serum into the brain. General anesthesia is not necessary. If the patient be conscious a little cocaine is injected into the scalp at a point where the puncture is to be made; a small hole is then drilled through the scalp and bone, and through this the needle of the exploring syringe is passed from the brain substance into the ventricle. After withdrawing the fluid the puncture is sealed with a collodion dressing. The subsequent punctures are easily effected by passing the needle through the same hole in the bone. If the fluid be distinctly turbid or at all purulent, drainage is preferable to repeated tapping and is effected by the introduction of a small flanged silver tube.

Yet another procedure, which has been resorted to in critical cases, is drainage of the fourth ventricle through a trephine opening immediately above or to one side of the foramen magnum. I have myself performed this operation on two occasions, at the request of Dr. Bruce; in both instances the operation was followed by a rapid return to consciousness, but the improvement was not maintained and both patients died during the third week after the operation. It is possible that some of the patients who are stated to be suffering from tuberculous meningitis and on whom this operation was followed by recovery were in reality suffering from non-tuberculous meningitis. The objections to drainage of the fourth ventricle are:

1. The severity of the operation, though it is only fair to state that it is a less formidable procedure than one would suppose.
2. That it fails to drain the lateral ventricles if the aqueduct of Sylvius happens to be blocked.
3. That it is difficult to control the amount of escape of cerebrospinal fluid.

Personally, I must confess, I am not inclined to recommend the operation, and I find that Drs. Lee and Barlow (for whom Mr. Balance performed the operation on six occasions during 1891 and 1892) state that "since 1892 they have felt that the results of operation in the cerebro-medullary region scarcely justified further trial." In one of the six cases operated on by Mr. Balance trephining of the occipital bone failed to secure an escape of more than a little cerebrospinal fluid, but on inserting the trochar through the anterior fontanelle into one of the lateral ventricles relief of the symptoms followed and the child recovered. The case was one of moderate severity and it is difficult to say how far the surgical interference had to do with the recovery.

To illustrate the value of repeated tapping of the lateral ventricles in acquired hydrocephalus resulting from posterior basic meningitis, I may refer shortly to the case of a child, aged 15 months, who was recommended to me by my colleague Dr. Fowler. When 6 months old the child suffered from an attack of posterior basic meningitis with blindness. which, however, subsequently disappeared. During the past four months the head had been enlarging more rapidly than normal growth would account for and the anterior fontanelle was abnormally large and tense, but the head did not present the characteristic features of a congenital hydrocephalic.

The knee reflexes were increased. The child was irritable, dull, took no interest in its surroundings and was evidently backward mentally. Each lateral fontanelle was tapped on two occasions through the outer angle of the anterior fontanelle, and on each occasion 1½ to 2 ounces of clear sterile fluid was withdrawn. No fluid could be got by lumbar puncture. There is now no tension of the anterior fontanelle; the child plays with its toys, and appears to be as bright and intelligent as other children of the same age.

Paraplegia in Pott's Disease.

From the point of view of prophylaxis too much stress cannot be laid on, first, early diagnosis; and, second, prolonged rest in the recumbent position. I am satisfied that paraplegia would rarely occur in Pott's disease if it were the rule to place and retain the child in the recumbent posture instead of allowing it to go about with a plaster jacket or other form of spinal support; all such supports should be reserved for the stage when the disease is believed to have been arrested.

In cases in which paraplegia already exists but is of recent origin, most surgeons, I think, are agreed that the best treatment is elastic or weight extension in the recumbent or the oblique posture, according to the situation of the disease.

Given a case of Pott's disease we are not as a rule able to state exactly the nature of the morbid condition which is giving rise to the paralysis. If an abscess exists and if the paralysis has developed suddenly we have good reason to suspect that the latter has made its way into the spinal canal.

I have under my care a girl who suddenly lost the power of both arms and legs while walking across the room. There was a history of cervical spinal disease, from which she was supposed to be recovering. On examining the neck I found a deep-seated abscess which I opened the following day at the posterior border of the sterno-mastoid, as originally recommended by Professor Cheyne, the next day the paralysis had almost completely disappeared and the patient has since made a complete recovery.

I have seen sudden paraplegia occur also in a case in which there was a very small abscess in the erector spinæ compartment in the dorsal region. Abscesses in this situation are often associated with disease of the vertebral arches, and when this is the case laminectomy is indicated and is often followed by excellent results.

Another cause of sudden paraplegia is the displacement backwards of a tuberculous sequestrum; here also laminectomy is indicated. Unfortunately such cases are not to be distinguished from those due the fracture of carious vertebraæ, in which complication operation is distinctly harmful. Fortunately both conditions are exceedingly rare.

In cases in which the paraplegia has developed gradually, laminectomy should not be resorted to until after fixation (with or without extension) has been given a fair trial. In two of Mr. Thorburn's cases rest and fixation brought about recovery after the paraplegia had lasted for 18 months.

The success of the operation will depend on the nature of the morbid condition which is found. The best results are obtained in those cases in which the pressure is due to direct narrowing of the spinal canal at the seat of greatest curvature. This condition is generally regarded as of rare occurrence, but Trendelenberg, who has had six good results out of nine cases of laminectomy for Pott's paraplegia, is of opinion that it is not so rare as is generally supposed. This author does not agree that the uufavorable opinions frequently expressed regarding the results of laminectomy in Pott's disease. It should be stated, however, that he deems the operation in recent cases and when there is diagnosis of the spine.

The least favorable cases are those in which the paraplegia is due to the pressure of a tuberculous collection outside the dura. By drawing the cord and carefully working between the nerve-roots (one of which may, if necessary, be divided when the disease is in the dorsal region) the tuberculous matter which is pressing upon the cord can often be removed, but this having been effected there still remains the disease in the bodies of the vertebræ, and this, unfortunately, can seldom be effectually dealt with; hence there is always a possibility of the reformation of tubercular material, and of a return of the paralysis.

Lastly there are those cases in which the paralysis is due to pachymeningitis. In these cases all we can do is to incise the thickened membranes. Here the prognosis is distinctly bad, and even should recovery occur the process must be a slow and often imperfect one on account of the secondary morbid changes in the cord itself.

As regards the operation, it must be remembered that the cord is often brought into close contact with the laminæ; and hence in removing the latter it is much safer to use forceps than either to saw or to chisel. Personally, I have found it a great advantage to adopt the plan recommended in Cheyne & Burghard's Manual of Surgical Treatment, but first of all to snip off one of the spines and then to remove a circle of bone from the vertebra arch with the trephine; in this way an opening is obtained for the introduction of the blade of the forceps.

I have no experience of the modern treatment by forcible reduction, introduced by Calot, but nothing I have been able to gather from a careful perusal of the literature relating to the method has induced me to alter the unfavorable opinion I had originally formed regarding it.

Did time permit I might refer to other surgical affections of the nervous system, but I fear I have already trespassed too much on your indulgence. In this very imperfect review I have endeavored to put before you some of the more important problems which present themselves for discussion. I am only too well aware of my inability to do justice to such a wide and important subject; I may console myself, however, by the knowledge that the distinguished surgeons who have kindly consented to take part in the discussion will make up for my shortcomings and that they will be able to indicate better than I have done the directions which we may look for its further progress.

Lastly, I trust that those who follow me will not hesitate to point out any directions in which the pendulum of surgical enterprise has swung far enough, or possibly too far; and this is an aspect of the discussion to which I look forward to valuable contributions from the physicians.

State Hospital for Consumptives.

State Architect Hein's plans for the proposed State Hospital for Consumptives have been approved and work will likely be begun this fall. The hospital will accommodate 100 patients and will be located at Raybrook, Essex County, between Lakes Placid and Saranac. It will be a 2-story brick building, constructed on the pavilion plan, with an administration building in the center.—*Amer. Med.*

SOCIETY REPORTS

BRITISH MEDICAL ASSOCIATION.

SECTION DISEASES OF CHILDREN.

Third Day, Friday August 1, 1902.

Discussion on "The Value of Physical Exercises of the Respiratory Tract," opened by Mr. Arthuthnot Lane, London. (Mr. Lane's paper to follow in full).

Mr. Lane, in opening the discussion, spoke of the structure of the nasopharynx, and of the origin and growth of adenoids, showing how these not only interfered with respiration, but were responsible for many secondary disorders. They are connected, for example, with some of the glands in the neck which are liable to become inflamed and enlarged, and thus form an excellent culture ground for the growth of tubercle bacilli. Again, the perfection of the auditory apparatus may be interfered with by any obstruction of the nasopharynx. The alveolar arch may be found narrowed, and the arches may be too small to accommodate the teeth in any regular order. The teeth therefore appear very irregularly and the deformity which results interferes with the proper use of the teeth, there being a certain amount of open-bite. (Casts of these deformities were exhibited). If the teeth do appear with more or less regularity the upper incisors may project forward, such superior protrusion being well shown in the most of the specimens. The condition of open-bite is of the utmost importance to the dentist. It is due, firstly, to imperfect approximation of the teeth. Then the child is unable to chew properly and the food is masticated imperfectly and bolted. This results in imperfect development of the muscles and tongue, and thus the deformity is exaggerated.

The tendency of medical men to discourage the use of the "comforter," and of thumb-sucking etc., in infancy, also interferes with the development of the muscles and the tongue. Among boys the deformities are less seen because boys tend to get food which requires chewing, take their food better, and escape sooner from female control.

All these deformities may be prevented, and, if present, improved or cured by rational treatment. In adult life we find that all sorts of disabilities become of social importance, especially in the struggle to obtain a husband. Girls ought to receive rational instruction in the importence of physical exercise. It is too generally assumed that it is improper for the female sex to receive definite knowledge of their anatomy, and hence too often a girl grows up in ignorance until her child is born. For girls whose associates are chiefly mature women of sedentary habits, training is a travesty of what it should be for those who are to rear a family. Ordinary gymnastics for girls are very far from what is really required.

Dr. Ashby said the subject was a very important one and suggested many allied topics. He wished Mr. Lane had rereferred to the important deformities of the chest often referred to as obstruction in the nasopharynx.

Sir Felix Semon said he was disappointed that Mr. Lane had not made use of his opportunity to reply to the important objections which had been raised against his theories by various writers in the medical press. No one would contest the value of respiratory exercises in their proper place; for example, in cases where some habit of years persisted after an obstruction had been removed, but there could be no question that grave mischief was sometimes wrought by persisting in treating by means of exercises a case which could be benefited only by operation. While it might be admitted that operation had, by some surgeons, been carried too far, the public had unfortunately got hold of Mr. Lane's views, perhaps in an exaggerated form and that the result was that many people resented a proposal to operate as a barbarism.

Dr. Spicer said he congratulated Mr. Lane on having carried still further the views he had expressed thirteen years ago on the results of disease of the respiratory apparatus. He had no doubt that Mr. Lane's views were quite sound. Adenoids are really due to nasal obstruction. In intranasal stenosis with slight obstruction the pressure falls to four times (? one-fourth) the normal pressure, and that is the cause of the adenoids. (Kymographic tracings were exhibited showing that the positive and negative pressure varies tremendously when there is obstruction, as compared with normal cases).

Dr. McBride, Edinburgh, said he thought the composition of the paper was admirable, the English being in certain places quite poetic, but he thought Mr. Lane had made use of what he might call the scientific analogue of the poet's license. He was rather disappointed in the small amount of combative matter which Mr. Lane had included in his communication compared to what he had done elsewhere. In cases of adenoids as they come under our notice most of us do not find any obstruction anteriorly, and therefore do not treat it. If there were obstruction, adenoids ought to recur after removal, but they do not. As to the indications for operation in patients suffering from adenoids he thought the most important was the presence of marked nasal obstruction. Then enlargement of glands was a strong indication for operation, and so was the existence of deafness.

Professor Baginsky said that many children had adenoids very early in life, and the whole nasopharynx might be quite filled. He did not see what use respiratory exercises could be in such cases because you could not get the children to do them.

He did not care for much operating in the case of young children with adenoids. He saw many cases where, after waiting for a few months, or perhaps sending the child to a bathing place, the adenoids disappeared without any operation being done.

Mr. Mayo Collier said that Mr. Lane had been accused of asserting that large solid growths in the post-nasal spaces could be removed by means of exercises alone, but he was quite sure that Mr. Lane had never made any such statement. Sir Felix Semon had denied that adenoids were the result of nasal obstruction, but he had never examined his cases during the time the adenoids were forming, and the absence of obstruction when the cases came under his notice was no proof that there had never been any.

Dr. Harry Campbell said that the frequency of adenoids among civilized people as compared with savage races was an important fact. He thought that the kind of food made use of had a direct bearing on the question. The civilized child is brought up on pap, and the muscles of mastication obtain very little exercise. Among savages the jaws and the muscles of mastication are much better developed. What bearing have these facts on the production of adenoids? He replied that the conditions found in savages implied a much better flow of the blood and lymph in the parts concerned. If you make a section of the head you are surprised at the large amount of space occupied by muscles and soft parts as compared with the bones. The plerygoid muscles are especially important owing to their size and their proximity to the nasopharynx.

Again pap favors the occurrence of catarrh. We use much more starch than our ancestors. Children get so much starch and sugar that fermentation occurs and no doubt a chronic toxemia is brought about which favors a catarrhal tendency. He would therefore advocate not merely teaching children to breath properly, but also to make sufficient use of their masticating apparatus.

Mr. Lane replied very briefly. He said he was a surgeon and not backward in recommending operation in cases where he thought it was really required. He had operated on a large number of cases, but he could not go into details.

The section then adjourned in order that members might hear Dr. Ballantyne's paper on "Congenital Diseases of Bone," read before the Section of Pathology.

Dr. W. Stoeltzner, Berlin, and Dr. Jules Comby, Paris, also presented notes on congenital disease of the bones. Specimens were exhibited by the former.

(Dr. Ballantyne's paper to follow).

Death-rate for 1901.

According to statistics just issued, Washington had the third highest death-rate among the larger cities of the United States during 1901: Charleston, S.C., stands at the head of the list with a death-rate of 29.11 per 1,000; New Orleans next, 21.44; Washington, 21.14; Baltimore, 20.25; New York, 20; Boston, 19.70; San Francisco, 19.34; Cincinnati, 18.88; Philadelphia, 18.27; St. Louis, 17.67; Chicago, 13.88. Iowa was the most healthful State, with a mortality record of 9.2 per 1,000, and among the territories, Arizona was first with a rate of 3.3. Louisiana has the largest percentage of deaths, 20.65. The healthiest town in the United States was Ellsworth, Wis., where, with a population of 1,500 there were only two deaths, one of those being from smallpox.—*Amer. Med.*

BOOK REVIEWS

MOTHER AND CHILD.—By Edward P. Davis, A.M., M.D. Pp. 254, 8vo. Philadelphia, J. B. Lippincott & Co. $1.50.

In the preface of this book the writer alludes regretfully to the death of his collaborator in the making of the first edition, Dr. John M. Keating. He states further in the introduction that "the form of the present (second) edition of the book has been largely suggested by the needs of his own practice, and embraces much of the advice which he usually gives his patients;" and that the book "is not introduced to supply prescriptions for medicines nor to take the place of the family physician."

The contents are quite extensive. As to the *Mother*, we have chapters on Pregnancy and Its Hygiene, on the Unborn Child, How the Dangers of Pregnancy should be Avoided, Labor, Operations, the Lying-in Period, and Successful Nursing. As to the *Child*, careful and plain directions, with illustrations, are given for the Cradle, the Food and Clothing, Artificial Feeding, Exercise, the Nursery, Signs of Illness in Children, Infectious and Contagious Diseases, Medical and Surgical Emergencies, External Applications, Vaccination, and other matters.

The style is of unusually pleasing literary polish, the subjects are thoughtfully and practically treated, and the sum-total of the information given will be of great value to all thoughtful mothers. The illustrations are mostly half-tone reproductions of photographs and very good. but we think the author's pattern of formaline disinfecting lamp much inferior to the sulphur-formaline candle now on sale in New York pharmacies. B.

LES ENFANTS RETARDATAIRES.—By Dr. E. Apert, Chief of the Medical Clinic in the Faculty of Medicine of Paris. Cloth, 96 pp., 8 vo. Illustrated. J. B. Baillière et Fils, Paris. 1 fr. 50 c.

This small volume finds its reason for being, the author thinks, in that it gives not a sociological nor psychological but a purely *medical* dissertation on the subjects included under the title. The contents embrace a clinical description of "pure types" of arrested development, those with obesity, with myxedema, with "feminism" and "virilism," with gigantism, and others; to which is added a short sketch of "arrested development of character" without physical defect. Following the clinical description are chapters on the course and duration of such cases, the etiology (with special attention to thyroid dystrophies), pathological anatomy, comparative anatomy of degenerations in the lower animals, and finally a chapter on pathogenesis and "pathogenic treatment."—While the volume is suggestive and helpful, it labors unders the necessary disadvantages of all short treatises upon large subjects,—it is incomplete and unsatisfying. B.

General Rules for Feeding Young Children.

The following valuable rules for feeding children are laid down by Gilman Thompson in his "Practical Dietetics":

1. Allow time for meals.

2. See that the food is thoroughly masticated.

3. Do not allow nibbling between meals.

4. Do not tempt the child with the sight of rich and indigestible food.

5. Do not force the child to eat against its will, but examine the mouth, which may be sore from erupting teeth; and examine the food, which may not be properly cooked or flavored. If good food is refused from peevishness merely remove it, and do not offer it again before next meal time.

6. In acute illness reduce and dilute the food at once.

7. In very hot weather give about one-fourth or one-third less food and offer more water. The young infant depends wholly on animal food and derives the necessary carbon largely from the sugar of milk. The older child lives on animal food in part only, and begins to derive additional carbon from bread and other cereal foods.

ABSTRACTS

A NOTEWORTHY CASE OF AORTIC REGURGITATION.

LEO JACOBI, M.D. (*N. Y. Med. Jour.*, Aug. 9, 1902). The following case presents at least one interesting feature, which will justify its publication.

The patient is a man, aged 35 years, a musician by occupation. He plays the violin and occasionally the cornet.

About three weeks ago, following a severe exertion while playing at a concert, he was seized with a breast pang. Though very short in duration the seizure struck him with the terror of impending death. Other disquieting symptoms—dizziness, headache, dyspnea and substernal oppression, appeared after the attack of pain, and he took to bed. At the same he became aware of a loud musical sound, which was issuing from his chest with every beat of the heart. He stated that he had been perfectly well prior to this break-down, but a close inquiry reveals the fact that occasional complaints of short breath had been made before.

As to the *status præsens*. On approaching the patient a loud, musical sound strikes the ear. The sound has the cardiac rhythm and very closely resembles the tone elicited by pulling the bass string of a violin. The musical note seems to proceed from the depths of the patient's chest, and the hand placed over the latter becomes conscious of a diffuse, purring thrill.

On auscultation, which is naturally undertaken first, the musical "murmur," to misapply the term,is found to be loudest over the ensiform cartilage, but most distinct at the aortic ring, over an area of the size of a 5-cent coin. The ear receives the clear impression that the sound is produced at the aortic orifice and transmitted downward, to be itensified, or better conducted through the structures, at the xiphoid process. The sound is audible during the diastole. It is well transmitted into the carotids.

At the apex, the first sound is muffled, the second is replaced by the murmur, which is much enfeebled at this point. The first sound at the pulmonary area is distinct, the second is swallowed up in the aortic murmur. The first aortic sound is replaced by a blowing murmur.

Over the smaller arteries, as far as the palmar arterial arch, a clear tone is audible.

Inspection shows the apex in the sixth intercostal space, the beat moderately forceful and ½ inch outside the mamillary line. On palpation, a strong diastolic thrill is diffusedly felt. Percussion shows enlargement chiefly to the left and downward.

The radial pulse is *celer et altus*, the rebound becoming more apparent on raising the arm. The usual minor phenomena of aortic regurgitation are present.

A study of the case seems to point to the previous existence of a latent aortic lesion which recently culminated in a valvular accident, possibly the rupture of a segment.

As to the interesting musical phenomenon, it is so loud as to be distinctly heard at the foot of the patient's bed. His wife assures me that the sound was still louder a few days ago, and could then be heard across the fairly large room.

TREATMENT OF CALCULUS IN THE URETER.

Dr. HUGH H. YOUNG, Baltimore (*American Med.*, Aug. 9, 1902), writes in part as follows: Physical examination is often of little help. When the stone is below the brim of the pelvis, the characteristic tender point on abdominal palpation, which often indicates the point of impaction of calculi higher up the ureter is absent. Rectal examination will, however, often show the location of the calculus. In 14 cases of Israel's, in which the calculi were located in the pelvic section of the ureter, they were felt by rectal or vaginal examination in seven cases, and Israel is of the opinion that if examinations are made carefully and frequently the stone should always be felt on bimanual, rectal and abdominal examination, except on fat subjects. In only one of my cases did the rectal examination give any indication of the presence of stone.

The cystoscope of Nitze is of great value, for we nearly always find more or less extensive changes in the ureteral papilla on the affected side. When the stone is not immediately in the lower end, in the paraischial or parasacral positions, we may only find a slight hyperemia and swelling around the orifice of the ureter. Intermittent spurts of turbid urine may, however, be seen.

When the stone is in the juxtavesical portion one generally sees a bulging of the wall of the bladder above or at the ureteral orifice, and the same is true when the stone is impacted in the intramural section of the ureter. When the stone is intravesical it may be completely covered by mucous membrane, as in the two cases of Newman, where the operator made the diagnosis of pedunculated intravesical fibroma. In these cases the orifice of the ureter could not be seen. When the stone projects through the lumen of the ureter it will of course be evident through the cystoscope, as in one of my cases.

The catheterizing cystoscope is also of great value. By its means the distance of the stone from the ureteral orifice can generally be determined. A stricture may also be detected, and in some cases dilated by means of the catheters and bougies.

Of greater value, however, is the possibility of accurately determining the condition of the two kidneys—especially the opposite one.

Recent advancements in clinical laboratory methods have placed at our disposal several valuable tests by which we can accurately gauge and compare the functional value of the two kidneys.

With the determination of the urea, the freezing points of the two separate urines, and the relative elimination of sugar by the kidneys after the hypodermic injection of phloridzin, we are prepared to determine accurately the value of each kidney, the chances of unsuspected calculus on the opposite side, and foresee the danger of postoperative suppression of urine.

The frequent report of deaths caused by taking out the only kidney, or where the remaining organ was atrophied, destroyed by cystic, hydronephrotic or pyonephritic changes or blocked by an unsuspected calculus, would not be found were the ureter cystoscope more frequently employed.

Of very great value also is the X-ray, and the medical profession owes a very great debt to Philadelphia for the splendid service which has been rendered by C. L. Leonard, in proving that ureteral calculi can be detected by the radiograph. It has been of very great assistance in my cases, and no examination can be complete without it.

There are of course slight chances of error. For instance a phlebolith of the lateral veins of the pelvis, or in the region of the seminal vesicles, where they are so commonly seen might be mistaken for ureteral calculus, especially in those cases of chronic prostatitis associated with slight hematuria. I have seen one such case, but the cystoscope showed that we had no ureteral trouble.

But a good radiograph should always be obtained, though we should not in our zeal take too many, as I have seen several very disagreeable burns result therefrom. With careful history, vigorous repeated bimanual rectal examinations, the radiograph and the cystoscope, the diagnosis of calculus, its location and the relative condition of the kidneys,is easy and certain, and we are now in position to decide upon therapeusis.

The therapeutic indications are so manifold, and I have already consumed so much time that I can only give a mere outline of the results of this study of the question. The treatment indicated depends on a multitude of things; the age,history and duration of the disease, the frequency and character of the attacks,the condition of the patient and above all the question of what the effect on the kidneys has been. The frequency with which calculi are passed one or more times,with no subsequent recurrence is sufficient to prove the value of a waiting policy. One of the cases which I have detailed has almost certainly passed a small calculus which was located at the vesical junction of the ureter.

Leonard's recent article in *American Medicine* (November 30, 1901) covers the subject very well. Leonard shows that small calculi may remain impacted for life on the ureter without producing symptoms or interfering with the function of the kidneys. They may, however, remain quiescent but destroy the kidney, which, after fruitless attacks of colic, may finally cease to secrete, and gradually atrophy, without producing any further symptoms, the other kidney assuming the entire work. If now the second kidney become blocked by a stone, the chances of fatal anuria and death after operation are great.

These facts should lead, as Leonard suggests, to frequent X-ray examinations to determine what is going on, and I should add, to an accurate determination of what was happening to the kidney, by ureter catheterization. If the kidney were not functionating, operation should be performed to remove the calculus, regardless of symptoms. When the attack is severe,suppression of urine or sepsis has set in, operation should of course be immediate.

In some cases ureteral stones have been crushed between the fingers in the vagina, and Rovsing reports a case in the male where a calculus was caused to be evacuated by abdominal massage along the ureter and by vigorously shaking the patient.

When it is projecting from the end of the ureter into the bladder it may in rare instances be extricated by means of a ureteral catheter, as in the case which I have reported. In my case this was quite easily accomplished by lateral pressure with the catheter,directed by the view through the male cystoscope. But this calculus was small.

Cystoscopic dilation of the lower end of the ureter to make room for the escape of a calculus has been successful in the male in three cases (Kolisher, Casper and Kreissl). I failed in my case. It might be more successful if done through a subrapubic opening, as Leonard suggests. When the stone is intravesical it can be most satisfactorily removed in the male through a suprapubic incision, and in some cases it may not be dangerous to incise the bladder wall to extract a calculus lodged in the intramural or juxtavesical portion of the ureter. But Thornton did this, produced a fistula into the peritoneal cavity and lost his patient. The The peritoneum often runs down to the junction of the ureter and the bladder and between them, and incision or dilation for stone in that location seems a very dangerous procedure, and the iliac extraperitoneal route is safer and to be preferred for many reasons.

When the stone is above the vesical juncture it is entirely out of reach from the bladder, and we have to decide between the several routes advised by different operators, viz., the perineal or prerectal.the intrarectal, the pararectal, the sacral, the intraperitoneal and the extraperitoneal or iliac route.

As we have seen above, the pararectal, the sacral and the intraperitoneal have not as yet been employed in the male, and the perineal or prerectal and the intrarectal only once each, with a fatal result in the latter.

On the other hand, the iliac, extraperitoneal route has been used 7 times with 2 deaths, and neither attributable to the operation.

The evident difficulty of the perineal and parasacral routes, the great distance necessary to go to reach the ureter, the inability to explore the ureter or kidney above, or to determine accurately the presence of stricture below, and the inability to attack the higher tract without another operation, seem to be sufficient to condemn all the inferior routes.

Stricture of the ureter, in my opinion, plays a greater part in the production of calculi, in determining their point of impaction, and in leading to their recurrence. After the removal of a calculus a careful search should always be made for stricture below,and ureteral bougies or probes should be made to pass freely into the vesical cavity from above. If this does not succeed, the milking process, which I employed to see if the fluid can be emptied into the bladder, may be tried. If all attempts fail, a stricture is probably present and should be cut if it cannot be dilated, and if situated at the vesical orifice it is a very simple matter to do an intravesical ureterotomy after opening the bladder through a lateral incision (without a new abdominal incision). In my case the result is good and the cystoscope shows that the stricture has not recurred.

The question of destroying the valve-like mechanism of the ureter is of course to be thought cf, and in cases in which the kidney above is healthy and the bladder infected the operation may be contraindicated.

The only operative route through which the kidney can be explored, removed if necessary or advisable, and stricture of the ureter treated is the iliac extraperitoneal. For this and many other reasons it should be the method of choice in all cases in which the stone is not distinctly intravesical or intramural. For calculi in the inxtavesical and paraischial regions of the ureter, it is distinctly better in every way than the inferior routes, in front of or beside the rectum, and for calculi in the parasacral position it is the only practical route.

A FLUOROSCOPIC AND PERCUSSION SIGN OF PLEURITIC EFFUSION HITHERTO UNDESCRIBED; REPORT OF TWO ILLUSTRATIVE CASES.

C. H. Green, M.D. writes as follows: The difficulties attending the positive and differential diagnosis of effusion into the pleural cavities are sufficiently great to insure a welcome for a new sign that is both simple and direct. Some time ago the writer's attention was attracted by the marked excursion of the heart borders in cases of pleuritic effusion as viewed by the fluoroscope during deep respiration, and this observation he found to be easily confirmed by percussion. The following cases illustrate the marked respiratory movement in two patients having right pleural effusion.

Case 1.—W. A. C., aged 18 years, born in the United States, single, a clerk. He weighs 128 pounds at present; weighed 140 pounds three months ago. His present illness began last February. At that time he had an attack of influenza, following which he experienced a sharp pain in the right side of the chest, accompanied with great difficulty in respiration. There was slight cough, but no expectoration. He continued to work with the exception of one day. The pain continued for a week when it disappeared, again recurring in two weeks. Since that time the patient has experienced a distressful sensation in this side, with a sensation of suffocation.

Family History.—Negative.

Previous Health.—Influenza.

Digestive Tract.—Appetite not good; some distress after meals; flatulence, etc.

Respiratory Organs.—Absolute dulness over the inferior lobe of the right lung, with enfeebled respiratory and voice sounds.

Heart.—Left border extends to the nipple line. Excursion, 1½ inch during each respiration. The aspirator shows clear serous fluid. Urine normal.

Case 2.—G. F. O., American, aged 34 years, married, a cheese-maker. Present weight, 175 pounds; best previous weight, 210 pounds; has lost 25 pounds in three weeks.

Present Illness.—Began four months ago when he contracted a cold;

has considerable cough accompanied with expectoration. Three weeks ago he was compelled to go to bed. The doctor in attendance pronounced the case typhoid fever with pleurisy. He recovered in twelve days. He lost rapidly in strength and weight, cough and hoarseness becoming more severe. Has some pain on the right side of the chest.

Social History.—Married five years. His wife is well and strong.

Family History.—Negative.

Previous Health.—Excellent.

Respiratory Organs.—Cough, expectoration, hoarseness, dyspnea, expansion diminished on the right side, dulness with diminished vocal fremitus over the entire right side. Friction rales occasionally heard. Breath sounds diminished in intensity.

Heart.—Left border extends slightly to the left of the nipple line and shows an excursion of 2 inches during each respiration.

Aspiration.—1,200 c.c. of clear serous fluid aspirated from the right pleural cavity.

Urine, normal.

It would seem evident that in cases of unilateral effusion of any sort there will be a marked excursion of the cardiac borders easily demonstrable by percussion and readily confirmed by fluoroscopic examination, and it is fair to presume that this is present in all degrees of effusion to a sufficient extent to assist the clinician in making a diagnosis. As this is but a preliminary report, the writer will content himself with the following statements:—

1. In unilateral pleural effusion the heart border corresponding to the opposite side shows a marked change in position as between full inspiration and full expiration, when the patient is sitting or standing erect.

2. This is easily demonstrated by percussion, sustained by the evidence afforded by inspection and apex auscultation, and absolutely confirmed if necessary by the fluoroscope.

3. Such a range of excursion does not occur in the normal chest or in those conditions likely to be confounded with pleuritic exudation.

4. The technic consists in percussing the free cardiac border in full inspiration and again in forced expiration with the patient in a standing or sitting posture and noting the change of position. The border will be displaced outward by the expiratory movement.

5. Percussion of the upper border of flatness posteriorly shows a well defined rise of the fluid in full expiration coincident with the outward displacement of the heart.—*N. Y. Med. Jour.*, Aug. 9, 1902.

NOTE ON THE ADMINISTRATION OF WATER IN DISEASE.

G. Frank Lydston, M.D., writes: Since the advent of the various theories of uric acid pathology, and the recognition of the value of the ingestion of large quantities of water in the treatment of the various conditions in which the poisonous products of tissue metabolism are supposed to be the *fons et origo mali*, this simple method of treatment has often been carried to extremes.

1. While the ingestion of large quantities of water in various affections is often of great value, the treatment is sometimes extremely detrimental.

2. The nutritive value of the blood is often impaired by the relative hydremia produced by the ingestion of large quantities of water.

3. Disturbances of the circulatory and nervous systems are frequently produced by it. So-called weak heart, palpitation, nervous irritability, lassitude and exhaustion on slight exertion are among the phenomena that may result.

4. Serious digestive disturbance, involving impairment of the secretion and composition of the gastrointestinal juices, and gastromotor insufficiency may be produced by the ingestion of water in large quantities.

5. Edema and anasarca, while often relieved by the free ingestion of water under favorable circumstances, are not infrequently enhanced by it.

6. Renal water habit may develop, by virtue of which the kidney becomes permanently sluggish unless it receives its wonted stimulus of large quantities of water.

7. Acute and chronic inflammatory affections of the kidney are sometimes aggravated by giving water in excess simply by overworking the renal organs.

8. Inflammatory affections of the lower portions of the genitourinary tract are often deleteriously affected by excessive water-drinking through mechanical disturbance necessitated by the resultant frequent and copious micturition.—*Medical News*, Aug, 9, 1902.

CARDIAC DISTURBANCE FROM HEPATIC INSUFFICIENCY.

A cure of an apparently hopeless case through reversal of diagnosis and treatment is reported by T. Hernandez (*Rev. de la Assoc. Med.*—far de la Isla de Cuba, year II, No. 7). Severe dyspnea, cyanosis, edema of face and body, and ascites made up the clinical picture of severe circulatory disturbance. Diagnosis of cardiac lesion with valvular insufficiency and fatal prognosis had been made by the attending physicians; and abnormalities of heart sounds and action seemed to justify this view of the case. Interrogation of the patient, a girl of 17, elicited the following history: Entire absence of rheumatic affections, personal or family; robust health till six months previous to present illness; when, after a severe cold, pain in the right hypochondriac region was noted, followed later by precordial distress with subsequent development of the condition described. The history led the author to the belief that the heart was not primarily responsible for the trouble, but rather that it was laboring to overcome obstruction to the circulation, and that this obstruction lay in a congested liver just as impeded renal circulation gives rise to cardiac hypertrophy in the nephritic. Acting upon this hypothesis, treatment was directed to the hepatic congestion and disturbed circulation, by active purgation, with the result that ascites and edema disappeared, heart function became normal, murmurs ceased and the patient was completely restored to health after two months' care. The writer believes that cardiac embarrassment arises more frequently than is generally supposed from deranged hepatic circulation, and that the latter should always be taken into consideration in the treatment of cardiac disturbance.—*Medical News.*

THE DIAGNOSIS OF TUBERCULAR FERITONITIS IN CHILDREN.

KISSEL (*Archiv fur klin. Chirurgie,* Bd. 65, Heft 2) presents the following conclusions after a study of 54 cases of tubercular peritonitis in children under thirteen years of age:

1. Tubercular peritonitis is more common in children than is usually supposed.

2. It can be laid down as a general rule that all cases of so-called spontaneous ascites are really due to tubercular peritonitis.

3. Not infrequently the exudate in the peritoneal cavity will disappear under general tonic treatment and the child will regain complete health.

4. In the majority of the cases the onset of the disease is imperceptible. The parents first notice that the child becomes pale and thin without apparent cause.

5. The presence of a coincident serous pleurisy is strong confirmatory evidence in the diagnosis of tubercular peritonitis.

6. Thickening of the parietal peritoneum is the most valuable sign in the diagnosis of tubercular peritonitis. This sign can be readily elicited before adhesions have formed by picking up a fold of the anterior abdominal wall and palpating the peritoneum between the thumb and fingers, provided the examiner is accustomed to the palpation of the normal peritoneum.

7. In exudative tubercular peritonitis the fluid obtained by tapping is very rich in albumin and has a high specific gravity.

8. In many patients who present no subjective symptoms and only moderate objective symptoms the whole peritoneum is found covered with a thick layer of tubercular masses.

9. Chronic ascites due to tubercular pericarditis affords the greatest difficulties in differential diagnosis, but this condition is very rarely seen.

10. Only in severe cases does tubercular peritonitis have a severe onset.—*Ther. Gazette.*

PEDIATRICS

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EDITORIAL COMMENTS

The Identification of Human Blood

The law of the formation of antibodies when a microbian toxin or similar body is injected into an animal has become generally familiar of late. The application of this principle to the treatment, prevention and diagnosis of disease may justly be considered the greatest medical triumph of the last decade of the Nineteenth Century. During the past few years articles have appeared by various writers—chief amongst whom are Nuttall, Belfonti, Carbone, Bordet, Wassermann, Schültze, Stern, Ulenhuth, Tchistovitch and Gengou,—describing experiments which gradually led up to the enunciation of the principle that serum or blood of an animal of one species injected into an animal of another species would cause antiserum to be formed in the blood of the injected animal, which would give rise to precipitins when mixed with the blood of an animal of the first species. Moreover, this action was found to be specific for a particular species. Only animals very closely allied have reactions in common. Antiserum for human blood has been found by Nuttall, who has tested blood from 140 sources, to give a precipitate only with human blood and that of monkeys. The principle involved and the practical application of this test are well set forth by Dr. Justin deLisle, in the *New York Medical Journal* for September 13, 1902, as follows: "The normal serum of one animal, when mixed with the normal serum of another animal of a different species, usually remains clear and transparent, but when the serum of an animal that has been vaccinated with the blood of an animal of a different species, is mixed together with the normal serum of an animal of that species, there will result a cloudiness, and, later on, a more or less heavy precipitate. This precipitate can only form in the serum of the species of animal that supplied the blood for vaccination when mixed with the serum of the animal that was injected. It is very easy to see how this law can be applied to a method for the identification of human blood. Directions for making a serum that contains the special precipitin for human blood are extremely simple. The most convenient animal is the rabbit. From four to six injections of 10 cc. each of defibrinated human blood should be made into the peritoneal cavity of the animal, at intervals of one week or ten days between injections.

"The serum of the prepared animal must be drawn off a week or ten days after the last injection. This serum can be kept in sealed tubes or closely stoppered bottles for a long time, or a few drops of chloroform may be added as a preservative. By prolonging the vaccination process, that is to say, by giving 20 or even 30 injections of 10 cc. of blood at intervals of three or four days, a serum can be obtained that is sensitive to a dilution of 1 part of blood to 50,000 of salt solution. This exceeding delicacy is, however, rarely necessary, and the former process of vaccination is the one recommended.

"Now with a little physiological salt solution wash the suspected spot; centrifuge this solution in order to free it from blood globules and other débris, then add a few drops of the serum of the rabbit that has been vaccinated with human blood and set aside in a warm place. The formation of a precipitate after 24 hours indicates the presence of human blood. To make the assurance doubly sure, add a few drops of ammonia to the precipitate, and should it dissolve, no further doubt can be entertained. This reaction can be applied to the identification of human blood that has fallen upon wood, metals, or cloth, and even after months of drying. Nuttall has obtained positive reactions from human blood that has become putrid and from human blood serum dried for two months on filter paper, glass, wood, etc.; also from blood that had been preserved by the addition of chloroform."

Prof. Charles J. Bartlett, *Yale Medical Journal*, September 1902, says: "The test has frequently been spoken of as a specific, or at least one where inter-reactions only occur in the blood of closely related animals. In another sense it is not specific. Thus extracts in physiological salt solution of various organs and tissues of the human body give a precipitate with a human antiserum. Certain pathological products, as pus, the serum of blisters, etc., give a similar reaction. The saliva, nasal mucus, spermatic fluid, milk, etc., has also been found to react, while similar substances from other animals do not react with human antiserum."

Hence Doctor deLisle lays great emphasis on the fact that the older methods are by no means to be neglected. They will tell us whether we are dealing with blood while the above-mentioned law will show whether it is *human* blood. These older methods are: The production of hæmin crystals, the spectrum of hæmoglobin, the guaiacum test and the microscopical examination of the blood corpuscles.

Of great practical importance is the fact that antiserum can be preserved for a considerable time in a sterile sealed tube after adding a little chloroform. T.

Clean Bathing Beaches.

As one result of not dumping the surplus garbage of New York City at sea, the bathing beaches at nearby resorts were practically clean this year, being in marked contrast to the miserable condition of former years.—*Med. News.*

ORIGINAL ARTICLES

ON DEFECTIVE CO-ORDINATION IN UTERO, AS A PROBABLE FACTOR IN THE CAUSATION OF CERTAIN CONGENITAL MALFORMATIONS.*

By JOHN THOMSON, M.D., F.R.C.P., Edin.,
Physician, Royal Hospital for Sick Children, Edinburgh; Lecturer on Childrèn's Diseases, University of Edinburgh.

THERE are at least three types of congenital malformation of hollow viscera in which the main anatomical abnormality present consists in very great muscular hypertrophy for which no permanent organic cause is discoverable. These are as follows:

I.—Congenital Hypertrophy of the Bladder with Dilatation of the Ureters and Renal Pelves, and with no Organic Obstruction.

In most cases of congenital hydronephrosis there are, I believe, organic constrictions in the ureter, bladder wall, or urethra which account for the damming back of the urine and the consequent dilatation of the passages. A considerable number of instances, however, have been reported by competent authorities in which there has been no permanent cause of blocking whatsoever. I have myself seen three or four cases of the kind. In these, so far as I know, there is always hypertrophy of the muscular coat of the bladder.

II.—Congenital Hypertrophy of the Colon with no Organic Stricture.

In many, probably in most, of the cases of constipation with dilatation and hypertrophy of the colon dating from birth or very early life a stricture of the bowel has been present. In many cases, however, described by most trustworthy observers, there has been no trace of narrowing.

III.—Congenital Hypertrophy of the Pylorus and Stomach Wall.

This group does not require further description, as its clinical and anatomical features are now well known and distinctly defined.

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These three morbid conditions have several points in common:

1. In all, the main abnormality consists in enormous hypertrophy of the muscular coat of a hollow organ which is known to be functionally active to some extent in utero.

2. The amount of the hypertrophy found in cases dying soon after birth is so great that it is generally admitted that it must have been present (to a considerable degree at least) during intrauterine life.

3. In none are there any evidence of such permanent organic obstruction as we should expect to find giving rise to the overgrowth of muscle.

4. No other abnormalities are usually present, except such as may be reasonably be regarded as secondary to the muscular hypertrophy.

In considering the pathology and etiology, therefore, the causation of the muscular hypertrophy is the first point to be settled; and it is of this only I wish to speak. With regard to it there are two main hypotheses:

1. That it is a primary developmental hyperplasia.

2. That it is a secondary hypertrophy resulting from overexertion.

A.—A Primary Developmental Hyperplasia: a Sort of Localized Giantism.—This supposes that the structural precedes the functional abnormality. It is suggested that you may have a congenitally big colon or pylorus just as well as a big liver or tongue, or arm or finger; or, as Dr. Cautley says, in speaking of the pylorus cases, that the hypertrophy may be "due to a simple redundancy of growth. Nature, in her extreme anxiety to provide an efficient pyloric sphincter, has overexerted herself, and produced too great a quantity of muscular tissue."

There are only two conditions that I can think of under which muscular hypertrophy seems to occur without antecedent overwork, namely, (*a*) the extraordinary hypertrophy of the uterus which takes place during pregnancy; and (*b*) congenital giantism, local or general, such as occurs in congenital hemi-hypertrophy.

The first of these will be admitted to be a thing altogether by itself. As to the second, there seems no impossibility in the idea of a local giantism of the pylorus, or bowel, or bladder. I doubt very much, however, whether there exists in human pathology, or indeed in Nature, a single instance of a localized true hypertrophy of muscle being certainly, or even probably, primary in character. By true hypertrophy of any muscle I mean such hypertrophy as results in increased power to perform its normal function.

B.—A Secondary Hypertrophy Resulting from Overexertion.—According to this view the functional precedes, and causes the structural anomaly. As John Hunter pointed out long ago, a hypertrophy from repeated forcible contractions is "a property in all muscles," striped and unstriped. Were it not for the exceptions already mentioned, we might claim acceptance for a further axiom to the effect that localized true muscular hypertrophy is always a proof of past overexertion. This is certainly not far from the truth. As Hunter also pointed out, this tendency to hypertrophy is greater in involuntary than in voluntary muscles.

That hypertrophy should occur in utero under the same conditions as it does after birth is what we should expect. Nor should we be surprised at its taking place more readily and to a greater degree there, owing to the extreme activity of the processes of nutrition and growth in the fetus. It is interesting in this connection to note that a case of true compensatory hypertrophy of one of the kidneys, occurring in antenatal life, has recently been published by H. Palm.

The cause of overwork in hollow organs is obstruction to the passage onwards of their contents. If therefore there has been overwork in the cases before us, there must have been some such cause. There is no trace of any organic cause present. Therefore it is reasonable to suppose that there may have been a functional cause.

If a functional cause has existed it must necessarily, I imagine, have been of the nature of a disturbance of the normal coördination. For the proper working of all hollow organs, perfect harmony of coördination is necessary, and even slight disturbance of the coördination may lead to greatly exaggerated exertion. This may not be so if the incoördination be of a choreic or stammering variety, such as that which causes incontinence of urine or feces. If, however, it is of a violent or spasmodic kind, as is seen in spasmodic retention, it will in time be such as inevitably to result in great muscular hypertrophy.

When we try to conjecture what the nature of such an arrangement of coördination could be, we get into a difficult region indeed; perhaps I should say into a region of guessing. Still one is tempted to make the following suggestion merely for what it is worth. May it not possibly be a sort of intrauterine "developmental neurosis,"—one of those passing disturbances which sets in at periods when the function interfered with is in process of very active development, being acquired but not yet perfect?

There are many neuroses in early life which may be looked at from this point of view. The schoolboy who is presumably straining after increased control of his muscles and greater verbal expression of his own or other people's thoughts, is at times subject to chorea or stammering. The new-born child while his breathing is yet irregular and feeble, may get congenital laryngeal stridor. While the young baby, whose efforts for months are largely expended in attempts at acquiring the difficult accomplishment of raising his head, turning it round, converging his eyes, and focussing his accommodation, is apt under favorable circumstances to acquire head-shaking, accompanied sometimes by convergent nystagmus and sometimes by hippus.

During the later months of intrauterine life, while the actions of the bladder, bowel and stomach are certainly developing and gaining both strength and precision, may not they also be specially liable to temporary functional derangement? The difference in character between the actions affected might of course account for considerable differences in the nervous phenomena.

As my time is necessarily short, I shall restrict what I have further to say to the subject of congenital hypertrophy of the pylorus. Of this condition I have now eight cases under my own care. My colleague, Dr. Burn Murdoch, has kindly let me see the notes of two of his cases; and I have also studied such records as I could find of 40 others. As a result of this study of 50 cases, I wish to refer to certain clinical facts which strike me as throwing some light on the etiology and pathology of the disease.

1. The comparatively isolated character of this malformation, which tells against its being really a teratological condition. There is, as is well known, a strong tendency for ordinary structural malformation (vitia primæ formationis) to be

multiple—several occurring together in the individual. It is therefore interesting that among the records of these 50 cases, only 6 instances are mentioned of malformations of other parts of the body; and several of these were probably due to fetal disease rather than strictly teratological in origin. They were as follows: (*a*) In Ashby's second case there was an imperforate anus; (*b*) in Still's first case slight webbing of the toes; (*c*) in Schwyzer's first case two areas of narrowing in the large intestine; (*d*) in Cautley's first case inguinal hernia and a cyst in the right cerebral hemisphere; (*e*) in Still's third case right hydronephrosis with dilatation of the upper part of the ureter; and lastly, in Stern's case, congenital dilatation with hypertrophy of part of the large intestine. The defects in the last two cases are especially significant.

My friend, Dr. J. W. Ballantyne, allows me to mention the further interesting point that in the large number of malformed fetuses which he has examined he has never once met with this abnormality of the pylorus.

2. The prominence of the spasmodic element in the symptoms after birth, which suggests the probability of a similar spasm in utero. As great muscular hypertrophy is the main anatomical, so spasmodic contraction of the stomach seems to be the main clinical feature in these cases. The evidence of spasm is to be found not only in the violent vomiting, but in the way in which the stomach frequently stands out, showing visible contractions and alterations in form. The fact that measured quantities of fluid often remain for two or more hours in the stomach, practically undiminished in amount. is due to the spasmodia closure of the pylorus. That this closure is spasmodic is certain, because we find that the stomach which is retaining most feeds for hours, will every now and then empty quite rapidly. In a few cases (Schwyzer's second, Saunders, and my own sixth case, not yet published) bilious matter has been found in the vomit. There is also evidence of relaxation from time to time of the pyloric spasm.

3. The apparent continued growth in size of the pylorus after birth, while the symptoms last, which suggests the probability of a similar growth in fetal life. Still has drawn attention to the striking fact that the pylorus seems in no case to have been felt before the fourth week of life. He argues from this that the hypertrophy greatly increases during the weeks after birth. It seems probable that this is so; and if it is

proved, it will surely be in favor of the hypertrophy having been from the first, a consequence of functional overaction.

4. The gradual disappearance of the symptoms in some cases, while there is reason to believe that the anatomical condition remains unchanged, and the immediate improvement after stretching of the pylorus in others, which are, under the circumstances, points in favor of a functional causation. They also suggest that the disturbance is of a transitory nature. Several cases which seemed to be instances of congenital hypertrophy of the pylorus, and which recovered without operation have been reported (Finkelstein, Still, etc.), and one remarkable case has been published by Batten, in which the diagnosis was confirmed by necropsy. Dr. Batten's patient, after showing the ordinary symptoms of the disease, gradually recovered, but when he died long after (aged 11 months) the usual muscular hypertrophy of the pylorus was still present. The functional spasm which causes the symptoms is not therefore a necessary consequence of the presence of even great muscular hypertrophy. The hypertrophy, when once it is there, may continue to exist without causing spasm.

In July, 1899, Dr. James H. Nicoll operated on a case by stretching the pylorus. The child improved immediately, and still remains well after three years, as Dr. Nicoll kindly informs me. In December, 1900, Dr. M. Schmidt, of Cuxhaven, followed Dr. Nicoll's example with a like result, and last April Mr. H. J. Stiles had a similar success in the case of one of my patients. That this procedure should have proved so successful seems a further indication of the transitory nature of the cause.

The Health of Cuba.

A letter from Major Gorgas, formerly of the American Medical Corps in Cuba, states that no case of yellow fever has occurred in Havana in eleven months, and that the general sanitation of Cuba is excellent. The Cuban authorities having maintained the high standard established under the military government.—*Phila. M.J.*

A NOTE ON THE SURGICAL TREATMENT OF SPASTIC INFANTILE PARALYSIS.*

By Robert Jones, F.R.C.S.,
Honorary Surgeon, Royal Southern Hospital and Liverpool Hospital for Chronic Diseases of Children.

FOR many years I have taken a considerable interest in the treatment of spastic paralysis, and have now operated upon over a hundred cases. Some of my results have already been shown to the members of the Society for the Study of Disease in Children. I think it will be agreed that from medicine we have nothing to expect likely to influence the course of the affection. Indeed, we have but to scan the text-books on neurology to realize the note of pessimism which is sounded.

Sir William Gowers, in his "Diseases of the Nervous System," says: "The tendo Achillis is sometimes divided for contraction of the calf muscles in infantile spastic paralysis, but the operation is useless and ought never to be performed." The same opinion has been pronounced by other distinguished men. I would argue that a large proportion of children suffering from severe spastic paralysis may be transformed into useful members of the community, improved both in body and mind by surgical methods, enabled to walk with comparatively little deformity, many requiring only the aid to be derived from one or two sticks.

The class of case which we can place outside remedial art is the idiot, the microcephalic and the violent irritable type of diplegic, so often seen, subject to fits and active athetotic movements, who has generally lost all control over his secretions. The treatment of any condition short of this may be undertaken with varying success, subject to conditions which obtain in any surgical case requiring prolonged attention. Another class which gives the greatest anxiety and trouble is that in which the affection of the hands is of such a kind as to promise but slight hopes of their assistance to the limbs during walking.

I would divide the treatment of all cases of spastic paralysis into operative and post-operative, for although mechanism is involved in nearly every case there is hardly a case which we are called upon to treat without invoking operative aid.

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Infantile hemiplegia usually affects the arm much more than it does the leg. This is almost invariably the case, and in this particular it differs from diplegia, where when the four limbs are attacked, the hands are frequently less severely affected than the limbs. Indeed, in hemiplegia the paralysis of the hands is sometimes absolute, and in addition we have a complication in the share of rigidity. The behavior of the lower limb differs also from that of spastic paraplegia in that the adductor spasm is proportionately not so marked.

The treatment of the hand and arm in infantile hemiplegia is distinctly less promising than in the diplegic cases, but there are clinical signs to which I would draw your attention which help us to prognose success or failure. If the paralysis is complete. or in other words, if the little patient is never known to relax his spasm, treatment is futile. If he only moves the fingers of his affected hand in conjunction with the fingers of the opposite side, the results will in all probability be discouraging. Similarly, where any degree of voluntary relaxation of spasm exists apart from an associated movement on the opposite side, treatment is indicated.

Noting that the dominant deformity in both hand and elbow is pronation and carpal flexion, treatment should consist in fixing the elbow supine and in hyperextending the wrist. The hyperextension of the wrist should be combined with that of the fingers, and a special arrangement adapted to keep the thumb at right angles to the palm. The spasm in these cases is so pronounced that the extension of the wrist and fingers must be brought about very gradually. If the elbow is accompanied by contracture of the biceps and brachialis anticus, supination may be combined with extension. If this be not the case the flexed position of the elbow will suffice. If instead of being firmly pronated the elbow lies semiproned, it is not necessary to treat it, and all one's energies should be directed to the hand.

It is difficult to give a reason as to how improvement comes about, but it may be taken as an axiom that prolonged fixation of spastic muscles in a position opposed to the spasm lessens the severity of the spasm. The operative treatment will consist of tenotomy or tendon transplantation: myotomy need only be mentioned to be avoided. An incision is made over the tendon of the flexor carpi ulnaris just above the annular ligament; another is made over the flexor carpi radialis, and both tendons are divided low down and taken: (*a*) The flexor ulnaris to be inserted into the extensor ulnaris, and (*b*) the radial flexor into the radial extensor. I performed this operation for the first time some years ago upon two spastic children, whom I showed before the Society for the Study of Disease in Children, and in both instances voluntary movements were steadily performed; and one, a girl of 9, was able to write quite a respectable hand. In order to overcome severe spasmodic pronation of the forearm, my friend, Mr. Tubby, has changed the point of insertion from the front to the back of the radius of the pronator radii teres, thus transforming the muscle into a supinator. The operation has been several times successfully performed.

Tenotomy alone has proved distinctly disappointing, although one has had an occasional successful case. The operation should be confined to the division of the flexor carpi radialis and ulnaris. It is, in my opinion, better to elongate the other flexors of the hand by a long median incision, such as one would employ in lengthening the tendo Achillis. Tendon transplantation, however, is a better operation, less complicated and more reliable. The surgeon's art, however, does does not end with the operation, and hyperextension of the wrist leaving the fingers free, should be practised for a further few weeks. In order to prevent adhesions after the operation the wrist should be freely, but withal very gently, moved in about a fortnight's time.

The nature of the movements to be practised must be left to the ingenuity of the surgeon. The principles which should govern him may, however, be indicated here: (*a*) The movement should be practised slowly and without excitement; (*b*) they should be made interesting to the child; (*c*) those opposed to the direction of deformity should predominate; (*d*) those presenting the greatest difficulty should be chiefly practised.

Just a word before we deal with paraplegia regarding tenotomy of the spastic muscle. Empiricism has taught us that for some reason or another tenotomy lessens both in frequency and intensity the spasmodic element in paraplegia. I do not merely mean to say that division of the tendo Achillis controls spasm in the calf muscles, although of course it does, but rather that spasm in which those muscles are not directly concerned is also influenced. This is beyond all question and must have been noted by everybody who has had the opportunity of observing, and the fact has now reached the robust stage when physiological explanations are vouchsafed.

If the surgeon has decided that a case of spastic paraplegia is suitable for treatment a splint should be prepared, so designed as to keep the limbs in marked abduction. The area over the hamstrings, the adductors at the groin, and the tendo Achillis should be prepared for operation. The adductors should be first attacked. An incision 1½ in. long should be made to the inside of the adductor longus. This muscle should be seized by a Spencer Wells or a small Doyen forceps, and about ¾ in. of it removed. The limb is then abducted and portions of the adductor brevis and gracilis are exsected in similar fashion. The horizontal portion of the adductor magnus, and, if necessary, the pectineus. is divided, and also any tissue, muscular or fibrous, obstructive to an absolutely free abduction of the femur. Experience has shown me that although the chief offenders are the adductors longus and brevis, nevertheless the deeper muscles often require division. To anyone who has practised this operation the futility of attempts to effectively divide the muscles subcutaneously will be apparent Division is followed with but little hemorrhage and the wounds are closed without drainage. Having exsected the pieces of the adductors, each tendo Achillis is divided subcutaneously and rectangular splints are applied to the foot. The limbs are then well abducted, and the surgeon notes whether there is any obstacle to easy extension of the knees. If there should be—it is not often the case—an open incision must be made on each side of the popliteal space, and the tense hamstrings are in turn divided. If these incisions are long enough the fascial contraction can be attacked on either side, for it is here that opposition is often found. I would discourage the use of a transverse incision, as when adopted it often seriously hampers the surgeon's efforts to fully extend the knee by reason of the strain cast upon the sutures.

We have now presumably got our patient comfortably stretched upon an abduction frame, and we must keep him there for at least three months.

At the end of three months the splint is taken off during the day and movements are seduously practised. For some weeks stiffness exists, and often the movements are at first painful, but after a time, always shortened by vigorous exercise, the pain disappears and the effort must be made to walk.

It will be noted that one of the difficulties of an untreated spastic when he tries to walk is the narrowing of the pedestal upon which the trunk rests by reason of the adducted limbs. Operation has now overcome this, and with abducted limbs the body is poised upon a widened pedestal. During early training the nurse must see that while walking the limbs are not approximate, and that, from the first, swinging the limbs must be prohibited. Crutches should not be allowed until the patient has been taught to stand unsupported. I need not enter into any more detail regarding this most important stage of treatment, but would add that it affords an inexhaustible field for ingenuity,and that upon the intelligence and industry of the nurse very much depends.

Diplegic hands are treated on the same principles as I have enunciated in regard to infantile hemiglegia, and they must be trained to hold sticks and crutches with a firm unyielding grip. I cannot now deal with individual cases, but I may say I have operated on cases from 12 months to 20 years of age. A large number of these were so bad that they had never attempted to place one foot before the other. Some were structurally flexed (contracted) at the ankle, knee and hip. A most helpless youth of 20, every limb across the other, was able in six months to stand erect and walk with two sticks, and twelve months later could move his limbs north, south, east and west, with hardly an appreciable jerk. Success in an ancient case, where so much has to be unlearned, and where the mechanical stage offers such difficulty, proves the accuracy and efficacy of the principles I have endeavored to expound. It is logical to infer that if old neglected cases are amenable to surgical education, that our prognosis should not be dismal in the young.

With regard to the degree of benefit to be derived from treatment, the parents should be given to understand that, under favorable conditions of nursing and tuition, the child, aided by the hand or sticks, will be able to walk varying distances in from twelve months to two years, and that with perfectly straight limbs and heels on terra firma. A large proportion of cases will later on manage aided by one stick. Even in the least suceessful cases, parents, mostly having despaired are full of gratitude. The mental condition of the children obviously improves when their physical defects are remedied, and they are enabled to mix with their little friends. Complete recovery in spastic paraplegia is of course impossible.

It will be gathered from my remarks that I wish to urge that the treatment of spastic paralysis should resolve itself into a system. Such a system involves operative, mechanical and educational stages. The treatment cannot be separated into parts. If the surgeon is not satisfied that the case is to be under his control for twelve months, he will consult his reputation best by leaving it alone. Operations not followed up by careful and prolonged after-care give rise to disappointment and discredit. Merely dividing tendons, to be followed by massage and electricity, is futile and dispiriting.

At the new Liverpool Country Hospital for chronic children at Heswall, which we intend to build for 200 patients, we hope to have a ward for these paralytic cases where we can keep them as long as needed. The nurses will be specially trained, and no opportunities will be lost from ignorance or neglect. The three months' time limit which general hospitals impose materially blights the prospects of paralytic subjects. They are neglected at home, and wander from one institution to another, often the victims of conflicting theory and diverse practice. The successful hospital management of infantile paralysis is not complete unless an organized system of education be inaugurated. This, in the case of spastics, must often be of the visual, as opposed to the abstract, type. Apart from its direct influence in improving the mind, we find it to have a sedative influence on the irritable. I have often thought that, if there were scholastic institutes for the care of the paralytic children of the well-to-do, an undesirable gap would be filled. With cheerful surroundings these little ones would enjoy in happy combination a development of both mind and body under the scientific auspices of specially trained instructors. Such advantages would render material aid to many helpless little cripples. As it is, treatment is often half-hearted, rarely continuous, entered into with misgivings on the part of the surgeon and despair on the part of the patient's friends.

(For discussion, see Pediatrics, Sept. 15, 1902).

ENLARGED FAUCIAL AND PHARYNGEAL TONSILS; GRANULAR PHARYNGITIS.*

By Samuel G. Dabney, M.D.,
Louisville, Ky.,
Professor of Ophthalmology and Clinical Professor of Otology and Laryngology in the Hospital College of Medicine, etc.

GENTLEMEN: This girl, aged 16 years, comes to us complaining of pain in her throat. Observe that she locates or refers the pain to a point about the middle of her throat. I want to caution you that the patient's statements as to the location of troubles about the throat and nose are to be taken with a great deal of allowance. They are quite frequently mistaken and believe the pain is located at a point some distance from where it actually is.

This girl says she also has some cough and expectoration. Her chief complaint, however, is recurrent sore throat, to which she has been subject for a number of years. She also has had some difficulty in swallowing.

She has had one of these attacks of sore throat for the past two weeks; she does not think any of the attacks have been attended by fever; she has no nasal obstruction; the cough she describes is probably not due to her throat, because it is attended by free expectoration; throat coughs are usually dry with little or no expectoration.

Upon examination we see in the first place quite a considerable enlargement of the faucial tonsils; they project ¾ inch toward the middle line of the throat beyond the pillars of the fauces; they are also redder and more angry looking than they ought to be. We observe on the posterior wall of the pharynx a condition just as important as the enlarged tonsils themselves. I have two or three such cases under observation at the present time. About the middle of the posterior pharyngeal wall there is an enlargement about the size of a pea, and around and above it we see smaller ones, and blood vessels coursing about the throat from one to the other of these lumps. This is known as granular pharyngitis. There are many other names for it, but I will not take time to give you the synonyms. This condition was formerly attributed to obstruction of the mucous follicles in the mucous membrane of the pharynx; more exact pathology has taught us that the disease is really enlarged lymphoid follicles in this region. The disorder is common in all ages and all walks of life. It is essentially chronic and subject to frequent exacerbations of pain and tendency to sore throat. It very often accompanies adenoid growths and enlarged tonsils, because you are to remember the morbid anatomy underlying these conditions is similar, both being enlargement of lymphoid structures. Associated with these conditions we are apt to have mouth breathing and other symptoms which are not present in this girl. Adenoid growths usually accompany enlarged tonsils and granular pharyngitis, especially in young persons. This patient is old enough for the adenoid to have undergone a certain amount of shrinkage, if one be present. She still has, however, decidedly enlarged faucial tonsils.

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* Clinical lecture delivered at the Hospital College of Medicine.

With the mirror I look behind the palate and determine what is to be seen in the way of an adenoid growth; just as I told you, she has quite a good-sized adenoid; even although she is 15 or 16 years old the growth has not shrunken to any considerable degree.

We find the patient's objective symptoms quite enough to account for all the discomfort she describes. We find in the first place enlarged faucial tonsils; this is something which would present itself to the most casual observer; it is something which we could not well overlook; but looking more closely we see that the posterior pharyngeal wall is red and angry-looking and dotted about it here and there are little red bumps,and coursing over the posterior wall there are some enlarged blood vessels; and then, as she has a tolerant throat, it is easy to examine her nasopharynx, and looking up behind her nose we find that the tonsil that we call the third tonsil, or pharyngeal tonsil, or adenoid growth, is also enlarged. These three conditions very frequently accompany each other.

Observe, if you please, that here is a cause of adenoid growth which has not caused the patient any apparent trouble. You have seen many cases where much trouble was caused by these adenoid growths, and they are apt to do so. Observe again that here is an adenoid growth where the patient is not a mouth-breather.

I am glad to show you this case, as it illustrates one phase of the subject that you have not before seen. This mass is too small to obstruct the nasal breathing, and too centrally situated to interfere greatly with the passage of air into the middle ear, and therefore the patient breathes easily and has no aural symptoms. What harm, then, will be asked, is this adenoid doing in such a situation? It is doubtless giving rise to a secretion in the naso-pharynx that she is constantly inclined to hawk out; or if she does not hawk out it is constantly dropping down into the throat to be taken into the stomach and there may cause digestive disturbances.

Which one of these three conditions before us shall we operate upon first, and what shall be the treatment? The treatment is essentially surgical for all three. It is removal of the pharyngeal tonsil with curette and forceps, or forceps alone; it is removal of the faucial tonsils, or the excessive portion of them, with the tonsillitome, and it is finally destruction of these enlarged follicles on the posterior wall of the pharynx with the galvano cautery point.

Now perhaps some of you will not be provided with a galvano cautery in your offices, and if you have not the necessary facilities for using the cautery I would recommend the use of chromic acid on the end of a probe; having first cocainized the granules on the throat, hold the probe with chromic acid firmly working it into the granule. Chromic acid is the next best thing to the electro-cautery; it is in my mind far inferior to the cautery because it cannot be controlled, because its action cannot be confined as well, and it is apt to spread.

In this case we will begin today by taking out one of the enlarged faucial tonsils; that is all we will do at the first sitting. In younger children you have often seen me remove both faucial tonsils, and sometimes also an adenoid growth all at the same sitting; but this girl at her age is far more apt to have hemorrhage, and we do not want to subject either her or ourselves to the chance of that annoyance—a hemorrhage that might be troublesome and might possibly be dangerous, so we will first remove only one of the faucial tonsils. At a later time we will remove her other faucial tonsil, next the adenoid, then we will destroy these granules on the posterior wall of the pharynx.

With the tonsillotome I have removed one of the faucial tonsils, which you see is not very large, but still sufficient to cause considerable trouble. It is observed that she has quite a free hemorrhage after the operation, for which we will prescribe the following:

℞	Tannic acid	6 drams
	Gallic acid	2 drams
	Aquæ dest	1 ounce

to be used as a gargle and a little sipped. This formula is known as McKenzie's tanno-gallic acid mixture, and I have found it of great service in controlling hemorrhages about the throat. It will not make a solution, it makes a thick brownish-yellow mixture, and the patient must be instructed to shake or stir it well before using. We will have this patient take this mixture with her, so that if she has any trouble from continued hemorrhage it may be arrested without the necessity of our seeing her. Besides this formula, and much simpler than the tanno-gallic acid mixture, is cracked ice, which is often of a great deal of value in controlling hemorrhage from the throat. It helps also to allay the pain which the patient sometimes has in slight degree after these operations. A vast number of remedies are recommended for the control of hemorrhage following tonsillotomy, but the others need not be mentioned.

This patient will be asked to come back to see us one week from today. We can promise her with a fair degree of certainty that by the treatment we have outlined we can cure her of the recurring attacks of sore throat and very likely improve her general health markedly also. We can assure her, moreover, that the treatment we shall apply will not be sufficiently severe to cause her to be laid up in bed, nor will it be very painful.

"A good digestion and an active liver are more useful in the battle of life than a knowledge of advanced mathematics, and sturdy limbs and strong hands are of more value to the mother of children than even decimal fractions and a familiarity with irregular verbs," says Sir Frederic Treves, to whom the English nation was largely indebted for his skilful treatment of the King in his recent illness.—*Brit. M. J.*

OPTIC NEURITIS IN THE YOUNG.*

By William Cheatham, M.D.,
Louisville, Ky.

Inflammation of the optic nerve may affect the papilla, the retrobulbar, or the intracranial portion. Pathologically and anatomically this is rarely true, as when one division is involved all three are likely to be affected, but there may be a difference in degree.

Among the most common causes are: Alcoholism, anemia, aneurisms, diseases of the kidney, caries of the surrounding bones, intracranial abscess and hemorrhage, softening, cerebritis, chorea, general paralysis, heat-stroke, hydatids, hydrocephalus, injuries to the head or spine, lead poisoning, loss of blood, malaria, rheumatism, gout, measles, scarlet fever, meningitis, tubercles, menstrual disorders, myelitis, tetany, nasal diseases, orbital diseases, syphilis, typhoid and typhus fevers, pregnancy, retained secundines, tumors of the brain, or nerves, or meninges; diabetes, pneumonia, diseases of the ear, excessive use of the eyes, errors of refraction, and heredity.

Juler says intracranial diseases cause four-fifths of the cases of papillitis, the most common cause being brain tumor, and puts anemia and chlorosis as the sixth cause in frequency; De Schweinitz as the fifth.

Varieties.—First. slight papillitis, congestion with edema, which dims but does not obscure the outlines of the optic disc. Second, moderate papillitis, outline of disc obscure, swelling moderate, commonly reddish, veins natural or large, sometimes tissues white around the vessels. Third, intense papillitis, veins large and tortuous, arteries small, hemorrhages, retina often involved; when of great extent known as retinitis (Gowers).

There is also a retrobulbar or retroöcular neuritis, and a perineuritis. Optic neuritis includes papillitis, neuritis and choked disc of other authors.

Three of the cases I will report come under the first classification and two under the second, and it is to be the first two classifications of Gowers to which I wish to call especial attention.

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* An abstract.

Symptoms.—Vision may or may not be affected; in the first and second stages usually but little; in the third stage it is usually much damaged or lost. Impaired vision may come on rapidly or slowly; sometimes loss of vision is sudden; field of vision usually concentrically contracted but may occasionally take other forms. I now refer to the so-called papillitis, not to retrobulbar or perineuritis. Red and green usually lost before other colors.

The eye externally generally shows no symptoms; there may be some pain on movement of the eye. If blindness is complete the pupil is dilated and immobile. The ophthalmoscope shows different degrees of dimness of outline of nerve, swelling of head of nerve, and decrease in size of arteries, increase in size of veins, and tortuosity of both. Hemorrhages may or may not occur on or in the neighborhood of the disc. If in the retina they are likely to be in the fiber layer and are flame-shaped. The arteries and veins may be partially hidden by edema. External appearances and symptoms are usually so slight that the ophthalmoscope alone can make the diagnosis.

In all of my cases there was some headache; one came on account of rheumatic episcleritis; headaches made worse by study. None had the more severe symptoms observed in Gowers's third stages, such as intense, constant, or interrupted headaches, vertigo, paralysis, nausea, or cerebral vomiting, loss of vision, convulsions, etc.

There was no contraction for either form or color. For colors, especially blue, green and red, visual field was above normal. The symptoms exclude all intracranial causes, aithough in severe cases of coarse disease of the brain symptoms may not be severe but latent; this, however, is rare.

The measurement of the height of the optic disc, or distance the swelled papilla projects into the vitreus, is given as a differential symptom in the classification of Gowers. When swelling is 3 D. or more it is said to come under classification No. 3. (⅓ mm. represents 1 D.). If there is 2 D. of elevation the nerve swelling is ⅔ mm. With the ophthalmoscope the height of the swelling can be measured; when it reaches 1 mm. (or 3 D.) it is considered true choked disc.

Pathology: First stage.—There is simply an edema of the papilla as far back as entrance of the central vein, mainly involving the connective tissue, with some increase of myelin. Second stage: Increase of edema with hemorrhages extending into the retina; frequent multiplication of cellular tissue; gray degeneration of medullary nerve fibers; exudative swelling and breaking up of medullary sheath into small drops and granules and tumefaction of the axis cylinder. In some of the specimens examined the central blood vessels of the trunk were compressed and empty; in others they were normal. The orbital portion of the optic nerve is frequently free of inflammation. Later pathologists say the whole nerve is involved in choked disc.

I have in the last few years seen five cases of papillitis in young chlorotic girls from 12 to 17 years of age. I have but little record of the first three cases. The first two, aged 15 and 17 respectively, complained of headaches and pain on use of the eyes. Vision perfect in both cases and there were no external symptoms. The ophthalmoscope showed papillitis. In all five cases it was double, the nasal half of the nerves more involved than the temporal, the left eye more than the right.

The third case was an anemic, overworked girl aged 12 years. Family history not good; family large, several suffering from different dyscrasias. She had headaches and said her eyes pained and smarted when reading; she held the print close to her eyes; pain over eyes constant; vision, each eye 15-20 or 3-4; no improvement with glasses. Under atropia vision 20-20; no error of refraction. In December, 1893, she had headache for three consecutive days; optic neuritis. February, 1894, mucopurulent conjunctivitis; optic neuritis much less in degree. Have no record of case since that time.

The fourth case was seen in February, 1900; a girl, aged 13 years, brunette; healthy parents; mother at present rather anemic. History of eyes burning on use; eyes water; letters blur; has had headaches a year or more. Under homatropine vision in each 20-20 C. plus 50 50 D.S. Double optic neuritis. She does not menstruate regularly; is quite irritable. Inflammation of right nerve mostly upward and inward, and slightly involves retina. April, 1900, hemorrhage above right nerve. February, 1902, vision each eye 20-20; had some headache during a recent examination; neuritis slight; general health much improved; is, I believe, taking iodide of potassium.

Form field and field for colors normal; patient is bright and cheerful.

Case 5 first seen in March, 1901; haalthy looking girl 15½ years old; mother not strong; father healthy. Right eye had been inflamed for several days; rheumatic episcleritis. March 11, 1901, under atropia sulphate, V.R. 20-200, C. plus 3 D.S. plus 75 D. 90° = 20-20. V.L. 20-200, C. plus 2. 50 D.S. = 20-30. Double optic neuritis; menstruation excessive.

Dr. Webster, of New York, saw this patient; found visual field and color perception good; double optic neuritis; cause, anemia, coming under head of DeSchweinitz's classification No. 5: "Anemia, both when this is an essential process and when it is caused by excessive hemorrhage." Also sixth classification, "disturbances of menstruation."

Blood examination showed decrease of red corpuscles. Visual field of right eye for form and color normal; vision normal in each eye with proper glass.

The last two cases, still under observation, are improving under tonics, rest, etc. Case 4 became so restless that she had to be permitted to take up some of her studies. Case 5, to occupy her time, goes to school, but neither studies nor recites.

When growths and other coarse intracranial disease, and disease of the kidneys can be excluded the prognosis is rather favorable.

"The cases of choked disc reported as having occurred in anemia and chlorosis deserve particular mention. In the cases described by Gowers it is a question whether there did not exist a secondary anemia, associated, for example, with latent tuberculosis, since solitary tubercles may have been present without exciting any special disturbance.

"Another thing rises in reference to Gowers's cases, when it is considered on the one hand how very rarely chlorotic choked disc has been reported, how often chlorosis itself is encountered by the general physician as well as the ophthalmologist. The writer has observed choked disc in a girl 15 years old in whom the only symptoms were headache and the usual manifestations of chlorosis. After a duration of several months the choked discs were followed by beginning neuritic atrophy. Within two years the patient died from general tuberculosis with brain symptoms." (Norris & Oliver's system).

This may apply to such cases as I have reportod, especially Case 3, yet it has been nine years since I first saw her. In

Case 5 there is a possibility of specific trouble. All my cases had outlines of disc blurred; arteries about normal in size; veins enlarged and engorged; swelling of papilla—Case 5 about 2 D., which represents 2-3 mm.; Case 4 a small hemorrhage in one retina. The symptoms all closely approach Norris & Oliver's intraocular neuritis of the second division, which they designate for brevity, "incipient choked disc."

These cases have been under observation for quite a long time, with no increase, but really a decrease, of both local and general symptoms with the presence at no time of the triad—"severe headaches, double optic neuritis, and cerebral nausea or vomiting"—observed in intracranial disease.

By exclusion I look upon these as cases of intraocular neuritis, if this is possible, depending upon anemia, or some dyscrasia associated with the age or time of life of the patients.

REMARKS.

Dr. T. C. Evans.—In the cases of papillitis that have come under my observation the cause has been hard to determine. The list of causes stated by Dr. Cheatham is sufficient evidence that we know little about the etiology; so many causes are given that when we come to exclude the different conditions and say positively which one is the real cause, it becomes exceedingly difficult.

I do not believe intracranial pressure, *per se*, is the cause of papillitis. Intracranial pressure may produce a form of toxemia similar to that produced by alcoholic poisoning, which may be a frequent cause of papillitis. The cases I have seen have not been so favorable as to final results, as Dr. Cheatham reports. Generally they have been followed by a considerable amount of atrophy and results were not good.

Dr. S. G. Dabney.—The fact of there being so many causes supposed to produce papillitis is proof of our lack of knowledge as to its causation. The type I have seen most frequently in young women did not resemble choked disc. I believe Dr. Cheatham said that in one of his cases there was choked disc, but the patient died later of tuberculosis. The cases I have seen in young women have been mild in type, a slight blurring of the edge of the disc, some enlargement of the vessels, asually with good sight. They have generally occurred in anemic girls between the ages of 14 and 17 years. I have never seen them attended with hemorrhages.

The field of vision is seldom apt to be impaired in the early stages; it is only later, when atrophy is beginning, that this occurs. An important point to remember in these cases is that vision may remain good for a long time.

Well defined choked disc always means intracranial pressure.

Dr. Wm. Cheatham.—As stated in the paper optic neuritis is not infrequently traceable to rheumatism. Although efforts have been made to do so they have never been able to produce this condition artificially.

Dr. Dabney is correct about choked disc meaning intracranial pressure, and when the skull is trephined and pressure relieved the choked disc disappears.

Smallpox in the United States.

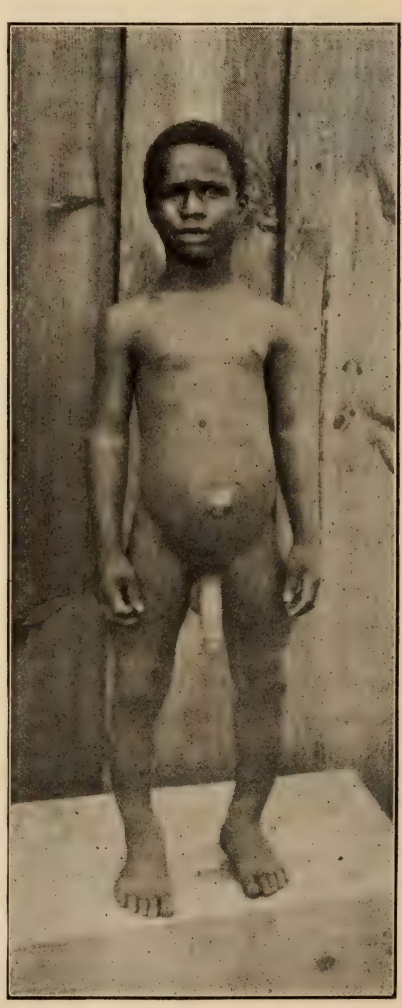
Reports from Washington, September 7th, state that there is more smallpox in the State of Washington than anywhere else in the United States. Between June 28, and September 5, 1238 cases have been reported with but one death, while only 38 cases occurred during the same period last year. Ohio comes next with 1104 cases and 82 deaths, as compared with 3417 cases and 42 deaths last year. Alaska has had but one smallpox case, reported from a mining camp near Juneau. Alabama, Georgia, South Dakota, Texas and Vermont are equally free from the disease, there having been but one case in each of these States during this period. South Carolina has had two. New York has had 167 cases, as against 496 last year. Of these cases 142 occurred in New York City, the rest coming from Auburn, Buffalo, Elmira and Niagara Falls. Pennsylvania has had 297 cases, as compared with 1077 last year; of these 121 were in Pittsburgh and 65 in Philadelphia. North Carolina had 326 cases this year and 318 last year.—*Phila. M. J.*

CORRESPONDENCE

A PREMATURELY DEVELOPED NEGRO CHILD.

Editor PEDIATRICS: The following case seems of sufficient interest to be reported.

Henry Lee, colored, born September 15, 1898, aged three years and ten months, black, kinky hair, grey eyes, height four feet, weight 56 pounds; bass voice, bow-legged, well developed breast, permanent teeth, full growth of hair on pubes, large testicles, penis 5 inches long. All internal organs are normal. Has never been sick; has never worn pants, but wears dresses; is of ordinary intelligence; eats five medium-sized biscuits and other food at meals, and says he loves the girls.



This remarkable growth commenced January 1, 1902, and has continued up to this time, six months and a half.

Family History.—Father a negro, 22 years old, copper colored, kinky hair and black eyes; height 5½ feet, and weighs 130 pounds. Mother, a quadroon, 18 years old; brown, curly hair, grey eyes, weighs 120 pounds, and is 5 feet 2 inches high. She has a second boy child, an octoroon, 2 years old, with straight hair and blue eyes—size normal.

Hogansville, Ga., August 7, 1902.

R. H. Jenkins, M.D.

Wholesale Importation of Trachoma.

Eighty-five cases of trachoma were found among the steerage passengers of the French line steamship LaGascogne and the Red Star liner Zeeland, which arrived at the port of New York recently. There were 65 cases on the former and 20 on the latter. The persons affected are mostly Syrians, Roumanians and Austrians. The only penalty for such attempted importation at present is deportation at the expense of the lines, but under the proposed new immigration act, which has not yet become a law, a large fine may be imposed upon any steamship company bringing diseased passengers to this port.—*Phila. Med. Jour.*

Smallpox at Barbados.

The steamer La Plata, which reached Kingston, Jamaica, September 7th, brought the news that a riot had occurred at Bridgetown, Barbados, August 25th, 500 people refusing to permit the authorities to remove a smallpox patient for isolation. The police were attacked and stoned, the riot act was read and the police charged. Many persons were arrested. On this account the British cruiser Retribution left Kingstown, St. Vincent, for Bridgetown, Barbados.—*Phila. M.J.*

PRACTICAL NOTES

Urethritis.

Dr. E. H. Siter, in *Ther. Gazette*, states that in looking over cases recorded, he has noted that nearly every drug in the pharmacopeia has been tried in the treatment of gonorrheal urethritis. The following are some of the more valuable formulæ:

℞	Hydrarg. chloridi corros	gr. ¼
	Zinci Sulph	gr. x
	Acidi borici	ʒi
	Tinct. opii	ʒiii
	Aq. destil. q. s. ad	℥vi

M. Sig.—Use as an injection three times a day; or:

℞	Zinci sulph.	gr. viii
	Plumbi acet	gr. xii
	Tinct. opii	
	Tinct. catechu, āā	ʒii
	Aq. destil. q. s. ad	℥iv

M. Sig.—Inject five times daily; or:

℞	Zinci acetatis	gr. ii
	Acidi borici	gr. xlviii
	Ext. opii	gr. xx
	Glycerini	℥ss
	Aq. destil. q. s. ad	℥viii

M. Sig.—Inject four times daily.

In conjunction with the local treatment it is well to use one of the following for internal medication:

℞	Tinct. aconiti rad	gtt. viii
	Sodii bicarb.	
	Pot. bromidi, āā	ʒii
	Liq. pot. citratis	℥viii

M. Sig.—One tablespoonful in water every two or three hours; or:—

℞ Balsami copaibæ
Ext. ergotæ flu., āā.................℥ss
Mucilag. acaciæ
Aq. destil., āā.....................℥ iss
M. Sig.—Two teaspoonfuls in water every four hours.

The following prescriptions have been used to a greater extent recently:

℞ Sodii bicarb.
Potass. bicarb., āā.................. ʒi
Potass. bromidi......................ʒii
M. Ft. chartulæ No. x. Sig.—One every two hours; or:

℞ Pulv. acidi borici
Potass. bromidi
Salol, āā..........................ʒi
M. Ft. capsulæ No. xii. Sig.—One capsule every two hours.

As the discharge diminishes the following is recommended in the form of an injection:

℞ Acidi carbol......................gtt.iv
Zinci sulph.
Pulv. alum, āā.....................gr.xii
Aquæ destil.........................℥iv
M. Sig.—Use as an injection three times daily; or:

℞ Zinci sulph........................gr.x
Liq. hydrastis (colorless)............℥ss
Plumbi acetat......................gr.xii
Aquæ q.s. ad........................℥vi
M. Sig.—Use three times daily.

And for the declining stage:

℞ Zinci acetatis
Acidi tannici, āā..................gr.xii
Aq. destil..........................℥iv
M. Sig.—Use once at bedtime; or:

℞ Zinci chloridi.....................gr.iv
Aq. destil..........................℥iv
M. Sig.—Inject twice daily.—*Jour. A.M.A.*

Sulphur Cream for Dandruff.

Dr. George T. Jackson uses the following sulphur ointment extensively in the treatment of dandruff:

℞	White wax	ʒiiiss
	Ol. petrolati	℥iiss
	Rose water	℥j
	Sod. biborate	gr. xv
	Precipitated sulphur	ʒiiiss

This is an elegant, smooth, white preparation without sulphur odor. It keeps perfectly, does not separate, and is as perfect as ointment can be. Dr. Jackson has tried on his scalp all sorts of lotions in the treatment of seborrheal dermatitis, and invariably comes back to the sulphur cream with pleasure and profit. Used once or twice a week, it keeps the scalp comfortable, does not make the hair too greasy when properly applied, and checks the dandruff.—*Jour. Cutaneous and Genito-Urinary Diseases.*

The Treatment of Croup.

The management of croup is one of the most trying problems that beset the physician, and one of the most ungrateful. Dr. Leopold Bayer recommends a method which he has tested for four years with uniform success, having treated and brilliantly cured twenty cases of true croup. He employs calomel and apomorphine, according to the following formula:

℞	Calomel	3 grn.
	Sugar	½ dram

Make eight powders. One powder every two hours.

℞	Apomorphine hydrochlorate	⅙ grn.
	Distilled water	3½ ozs.
	Dilute hydrochloric acid	2 drops
	Syrup	2 dr.

Teaspoonful to dessertspoonful every two hours.

The two remedies are given alternately, so that the patient gets calomel one hour and apomomorphine the next. For children under two years, the dose of calomel is reduced to about ⅙ grn. Both prescriptions may be repeated, and in the author's cases more than two repetitions were never required. The calomel should be partially discontinued as soon as amelioration is noted, lest untoward results appear. The apomorphine may be continued longer. The sooner this treatment is begun, the better. But even commenced on the second and third day of the disease, it offers good chances of recovery. After twelve hours of medication an improvement is generally noticeable in the easier breathing. The stenotic phenomena gradually gave way to normal respiration.—*Merck's Archives.*

The Signs of Death.

The signs on which a medical man should rely as furnishing the best evidence of the reality of death, prior to the commencement of putrefactive changes, are:

1. The absence of circulation and respiration.
2. The gradual cooling of the body, the extremities cooling first and the trunk last.
3. Gradual supervention of rigor mortis.
4. The production of post-mortem stains or ecchymoses.

The careful observation of these four signs by a medical man will enable him to distinguish a living from a dead body. —*Brit. Med. Jour.—Jour. A.M.A.*

The Vaccination By-laws in Montreal will be strictly enforced during the coming fall and winter season. Official circulars have been addressed to the managers and superintendents of schools and colleges requiring certificates of vaccination from all pupils.—*Dominion Med. Monthly.*

Since the first of January there have been 500 cases of smallpox in Montreal; in the same time in Toronto there have been 28 cases. Montreal had 11 deaths and Toronto 1. In Montreal 432 of the patients had never been vaccinated. On September first Montreal had 4 cases.—*Dominion Med. M.*

ABSTRACTS

THE PREVENTION OF DEFORMITY.

W. R. Townsend (*Jour. A.M.A.*, Sept. 13, 1902) writes as follows: Practically all the deformities due to poliomyelitis or infantile paralysis can be prevented. The original lesion does not primarily produce a deformity, but simply a loss of power in the muscle or muscles affected. The production of deformity is due to· (1) Gravity; (2) the action of non-paralyzed muscles; (3) the arrested development and growth of tissue in proximity to the muscles paralyzed; (4) the results of weights applied to the weakened structures; (5) all other causes.

The varieties of clubfoot are many, and the non-congenital are nearly all preventable by simple treatment and by a clear recognition of the fact that unless care is taken they will occur. Non-congenital clubfoot may be divided into (1) simple acquired; (2) paralytic; (3) traumatic.

1. Simple acquired clubfoot includes all cases due to rachitis, rheumatism, chorea, hysteria, malaria, chronic ergotism, faulty positions in standing, tumors, weak ankles, relaxed ligaments, sprains, diseases affecting hip, knee, leg, foot, or ankle; non-paralytic, as synovitis, arthritis, caries, necrosis, osteomyelitis, etc.

2. The paralytic includes all cases due to poliomyelitis anterior, hemiplegia, meningitis, myelitis, progressive muscular atrophy, spastic cerebral and spinal paralysis, compression myelitis, irritation of pyramidal tracts, syringomyelia, etc.

3. The traumatic includes all cases due to fractures, dislocations, injuries to skin, fascia, muscles, or nerves. burns and cicatrices.

In chronic joint disease the proper treatment consists in the cure of the disease without deformity, but how often is this accomplished?

Following burns of the various parts of the body, deformities often occur, and in most cases could and should have been prevented. Contracted fingers, elbows drawn to such an extent that the hand nearly touches the shoulders, feet in marked equinus or calcaneus, extreme torticollis are illustrations familiar to all surgeons. After operations on bone, deformities often occur. They are due to failure to realize that although an excision of the knee has been skilfully performed, yet the union is not firm enough to support the body weight for many months. For the prevention of flexion deformity it is necessary that apparatus be worn for a very considerable period after the operation, and this is also true of other articulations. After operations on muscles for the relief of deformity, care must always be taken lest the same recur.

To faulty decubitus in any form of illness many deformities are attributed, and those can nearly always be prevented. A flexed knee a contracted heel-cord, a deviated spine. are familiar examples, requiring subsequent tenotomies, myotomies and even operations on the bony system for their correction.

In synovitis, in rheumatic joints, in septic conditions of soft parts or articulations, the possibility of faulty positions becoming permanent should always be taken into consideration. A shortened lower extremity from any cause, a tilted pelvis, an inflamed joint or inflammation of the soft parts may lead to spinal curvatures that should have been prevented, and it is the duty of all to see that such deformities do not occur.

Faulty position in school, the carrying of undue weight on one side, the failure to properly maintain the erect position are all familiar conditions that lead to deformities that are in most cases easily prevented, and many more examples could be cited. Toe-drop from the application of splints, of bandages for knee or hip disease, for fractures, dislocatlons, sprains, or diseased conditions of any kind, is a preventable deformity, because if the foot is kept at a right angle with the leg it will not occur.

Permanent stretching of muscles, as in wrist drop, etc., from palsy of any cause, such as poisoning from lead, can be prevented by simple means; yet many treat the disease and pay no attention to the prevention of deformity, Many congenital deformities are most amenable to treatment, such as the slight degrees of clubfoot, but if treatment is delayed for any cause, the deformity then becomes serious and most difficult to treat.

The prevention of deformity therefore should be clearly impressed on all those who are called upon to treat any condition that may lead to it,and once it is clearly understood that certain deformities frequently seen can be prevented, many a patient will be spared much inconvenience and subsequent trouble.

The prevention of deformity is a subject that must be attended to by the family physician, because the surgeon is rarely called until it has occurred.

The methods to be used in preventing any particular deformity will readily suggest themselves to the physician, or can be found in most of the works on orthopedic surgery, and need not be referred to at this time. The plaster of paris dressing is, however, one that can be recommended in many instances, and is cheap and always obtainable.

THE POSITIVE DIAGNOSIS OF MENINGITIS, PARTICULARLY TUBERCULOUS, BY MEANS OF LUMBAR PUNCTURE.

Alfred Hand, Jr. (*Phila. Med. Jour.*, Aug. 30. 1902) says: Referring to the percentage of uncertainty in the examination of the fluid drawn by lumbar puncture,positive results were obtained in 32 out of 37 consecutive cases, the results of 5 being classed as extremely probable. These results were as follows: Tubercle bacilli were found in 26, pneumococci were found in 2, meningococci in one, and 3 were normal specimens; probable diagnosis was made in the remainder, cocci being present in 2, one being apparently serous meningitis and 2 an infectious meningitis of undetermined origin.

The changes which occur in the cerebrospinal fluid as a result of meningitis are diminution or absence of sugar,increase of albumin and,except in simple serous meningitis, the presence of leukocytes, bacteria and frequently endothelial cells.

Sugar.—As far as his results indicate, the presence of sugar, when other signs show meningitis, is suggestive of tuberculosis; its absence does not exclude tuberculosis, for in 3 cases tested with phenyl-hydrazine it was completely absent from the fluid, tubercle bacilli having been found and the autopsy in one case confirmed the diagnosis. In another case the first tapping gave no reduction of 1 cc. of Fehling's solution with 5 cc. of fluid; six days later there was a partial reduction, bacilli having been present in each lot of fluid. Since then he has used the phenylhydrazine test exclusively, as the amount of fluid for examination is usually not great. Complete absence of sugar is said to be the rule in all the other forms of meningitis, except the serous, in which it is very much diminished.

Albumin.—The normal amount of albumin in cerebrospinal fluid is said to have a maximum limit of 0.25 part in 1000. In estimating the albumin he used the urine centrifuge tubes, adding to 10 cc. of the fluid 1.5 cc. of acetic acid and 3.5 cc. of a 5 per cent. solution of potassium ferrocyanide, allowing it to stand for an hour or two and then centrifuging to a constant level; this gives the percentage by bulk, the corresponding equivalent of 0.25 per mille, being about 1.9 per cent. by bulk. Several normal specimens have shown not more than 0.5 by bulk, while ordinary meningitis gives 4 or 5 per cent. and tuberculous often runs as high at 9 per cent,, one specimen having contained 16 per cent.

Leukocytes.—Some writers have attached much importance in diagnosis to the varieties of leukocytes present, the polynuclears being in the majority in non-tuberculous meningitis and the lymphocytes in excess in tuberculous; some observers have failed to confirm this.

The author has been able to make fairly accurate differential counts in 18 of the tuberculous cases; in 16 the percentage of lymphocytes was between 85 per per cent. and 99.8 per cent.; in one the percentage was 65 and in another the specimens from two tappings gave 35 per cent. and 85 per cent. respectively. It would seem then, that the rule is not without exception and that the possibility of a given specimen being the exception prevents the differential count from giving positive data upon which to base positive conclusions.

The polymorphonuclears were in excess in all the cases in which tubercle bacilli were not found, and one of these patients, tapped after an illness of several weeks and giving a clinical picture of tuberculous meningitis with rigidity, strabismus, emaciation and stupor, improved decidedly after the puncture and recovered completely. In the two cases of tuberculous meningitis giving a low count of the lymphocytes, the only point of difference from the other tuberculous cases appeared to be in the number of bacilli present in the fluid; in these two cases the bacilli were very few in number and found only after a long eye-trying hunt; and yet there is not always a direct relation between the number of bacilli and the lymphocytes, for the slide giving 99.6 per cent. of the latter had an average number of bacilli, while the one giving 99 per cent. had countless numbers of bacilli in every field.

Bacteria.—The bacteria found have been the tubercle bacillus, the pneumococcus, unidentified cocci and an intracellular diplococcus, probably the meningococcus, which did not grow on blood serum or agar. In several cases the tubercle bacilli were associated with cocci, so that the mere presence of other germs does not exclude tuberculosis. It would not therefore be justifiable, having given a fluid containing cocci, an excess of lymphocytes and perhaps a trace of sugar or none at all, to attach any importance to the failure to find tubercle bacilli and to say that the case is not tuberculous but due to cocci; nor, on the other hand, would the excess of lymphocytes and the trace of sugar be sufficient grounds for a positive diagnosis of tuberculous meningitis. He believes, however, that with his technique, tubercle bacilli will be found in at least 96 per cent. of tuberculous cases on the first examination.

THE BACTERIAL EXAMINATION OF CITY MILK. IS IT HARMFUL? SHOULD IT BE CONTROLLED BY THE HEALTH AUTHORITIES?

W. H. PARK (*Yale Med. Jour.*, September, 1902) writes as follows as to the number of bacteria in the city milk:

From an examination of nearly 1,000 specimens, gathered by Dr. Herman Betz and his Health Department Inspectors, from the cars, the wagons and the stores, and many specimens taken from the children's asylums, there is no question about the enormous number of bacteria present in the city milk.

Now as to the harmfulness of this milk: The group of children under one year on heated milk received from decent farms, running before heating from one to five million bacteria per cc. did not, so far as we could see, suffer any serious harm from the bacterial products in the milk. During the summer these children had, off and on, intestinal disorders, but not much more than those in the same section of the city receiving milk from the very best possible dairies around New York. The children on Pasteurized milk showed some very interesting results. There were very few bacteria in this milk when first received—anywhere from 10,000 to 20,000; but on the second day they had so increased as to be from ten to thirty millions. In some cases where the second-day milk was given there was immediate vomiting followed by diarrhea. As the freshly Pasteurized did not produce this poisoning, there seems to be no question that the bacterial changes in the milk rendered it unwholesome.

The fresh milk running rather high in bacteria which did so little harm was sterilized, according to the practice of the people of the tenement houses. The heat not only killed the bacteria but probably diminished the deleterious products of their growth.

The group, getting cheap 4-cent milk from the groceries, did badly. The bacteria did not run very much higher in this milk than in the first mentioned—probably about four times as high, on an average—and it is impossible to say why the results should have been so much worse unless not only the number but also the varieties of bacteria were different, or that, in addition, the milk was produced by cows in poor health. Among the infants fed on 4-cent milk from the grocery stores, 4 of the 25 children died, while there were only 2 deaths among all the other groups, comprising nearly 100 children. In all cases where they developed intestinal disturbances the infants were taken for the time off the modified milk and everything done to help the children to regain their health. If they improved they were put back on their old milk.

In the asylums, where the children were from 3 to 13 years of age, we found no trouble during the summer months from the milk, although in some cases it ran as high as 100,000,000 bacteria per cc. As controls, we watched infants in the hospitals and in the tenements taking breast-milk, and these not infrequently developed intestinal disorders, showing that we could not in all infants taking cows' milk attribute these disorders to the milk impurities.

Altogether it seems that fairly numerous bacteria in milk obtained from clean, healthy cows living on good farms, do not cause harm in the older children and the products do not cause much harm in younger children when subjected to heat. When milk contaminated badly and improperly kept, so that the bacteria greatly multiply, is fed to babies, they do badly, and it seems that much of the mortality is due to poisonous conditions of the milk developed by bacteria.

The reasons for the enormous development of bacteria in the milk were insufficient cleanliness in getting the milk and very faulty cooling arrangements. The farmers mostly put their milk in springs; as the summer advances the water gets higher in temperature until it reaches about 60°. Some farmers hardly cool their milk at all. The author has seen milk shipped in cans standing in a car where the temperature was 90° and left there without any ice for seven hours. The City Health Board has passed a rule that all milk shall be at 50° or under when it reaches New York City. This rule will be enforced in 1902.

The Health Department found that milk from a decent farm properly cooled will not run over 100,000 bacteria per cc. at the end of 24 hours, and that such milk if kept for two days at 45° F. will not run more than 200,000. Therefore, all milk that runs over 100,000 bacteria per cc. has certainly not been kept in a proper condition, and such a number of bacteria indicates faulty methods of caring for the milk. The Health Board has passed a resolution saying that milk containing excessive numbers of bacteria is unwholesome and should not be sent to New York.

THE IMPORTANCE OF MILK ANALYSIS IN INFANT FEEDING.

A. H. Wentworth (*Boston Med. and Surg. Jour.*, July 3, 1902) gives the following summary of the result of his researches:

1. The general statement that the upper one-fourth of one quart of cow's milk in which the cream has risen contains 10 per cent. of fat, represents the average of a large number of milks. There is too much variation in milks from different cows to enable me to figure modifications of milk on this basis with any degree of accuracy.

2. The results of the great variation in cow's milks would not be of so much consequence if the percentage of fat in the cream were always low. Too much fat in a modified milk is more likely to cause digestive disturbance than too little.

3. It is advisable therefore to have the percentage of fat in the cream determined at least once whenever an infant begins to use modified milk. It is also advisable to have the fat determination repeated at the times of year when the food of the cattle is changed.

4. It is not advisable to modify milk with a cream in which the percentage of fat is too low (under 10 per cent.) because if one obtains a sufficient percentage of fat in the modification the percentage of proteids will be too high in many cases.

5. If the percentage of fat is too low in the upper 8 ounces from 1 quart of "set milk," it is better to take fewer ounces off the top, determine the percentage of fat in these ounces, and use such a number of ounces of cream as contains 12 per cent. or more of fat. If more proteid is required it can be obtained by the addition of lower milk which is almost free from fat.

6. A safe rule would be to have at least one determination of fat made no matter how many ounces are taken from the top of the "set" milk, and afterward to continue to take the same number of ounces off at each time.

7. In order to make a modification of milk in which a high percentage of fat is combined with a low percentage of proteid, it is necessary to use a cream that contains a high percentage of fat. In general it is better to use a cream removed from the milk at home than to use cream bought for this purpose, because the latter is much more likely to be stale and to have undergone changes due to heat and to age.

8. Within certain limits, accurate percentage modifications of milk are not essential to the well-being of a majority of the babies that are fed on modified milk. Proof of this is afforded by the fact that so many infants do well when fed on modified milk, and yet it has been shown by the results of analysis that these modifications are rarely accurate. Unfortunately it is not always possible to tell beforehand to which class a given case belongs, and this is a sufficient reason, even if there were no others, for modifying the milk as accurately as possible. A complete analysis of the milk requires too much time and training to make it a practical procedure, except in special cases. The determination of the percentage of fat in the cream used for modification is easily made, requires but a few minutes to do, and enables modifications of milk to be made that are accurate enough for most cases, if in addition directions for modifying are carefully given and followed.

9. The *advantage* of modifications of milk furnished by establishments is that it is convenient. It relieves the family of all responsibility so far as the preparation of the infant's food is concerned.

Three great objections to the use of commercial modifications of milk are: (*a*) inaccurate modifications; (*b*) stale milks; (*c*) expense.

(*a*). The claim is made by those interested in the sale of commercial modifications of milk that the percentages of fat, sugar and proteids are accurately determined in each modification. This claim of exactness forms the basis upon which such commercial modifications of milk largely depend for their success. Analyses submitted by the writer show how little dependence can be placed upon such statements.

(*b*). People who reside beyond the limits of wagon delivery—and most people do for several months each year—have to use on Sundays and part of Mondays milk that is delivered on Saturdays and of a necessity milked on Fridays. It is claimed that no deleterious changes take place in these milks if they are kept cold. A sufficient number of clinical observations have been made to show that such a claim is unwarranted.

(*c*). The cost of modifications of milk made at home is less than 25 cents a day. Compare this with the cost of commercial modifications of milk, to which must be added in many cases the cost of the transportation.

10. The technique of fat determination by the Babcock method is simple and easily acquired. The entire outfit, including a centrifugal machine, flasks, pipettes and acid can be purchased for $9. The time required for a fat determination by this method is about fifteen minutes. —*Amer. Jour. Obstetrics.*

PHYSICAL TRAINING OF SCHOOL CHILDREN.

The Board of Education has recently issued a series of practical suggestions addressed to school managers and teachers of elementary schools generally, but particularly to those in rural districts,in regard to the physical training of school children. It is pointed out that, as a general rule, physical training should be carried on by the ordinary school staff, as having,it is to be presumed,more influence over the children and a special knowledge of their individual character. But it is recognized that a preliminary step is for the ordinary school teachers themselves to learn physical exercises and methods. For this purpose it is recommended that schools should group themselves together in order to secure the services of a qualified instructor who preferably should have been trained in the army gymnastic course. The War Office has issued instructions to all general officers commanding districts providing for the employment, by voluntary arrangements, of qualified non-commissioned officers as instructors of teachers' classes. Managers desiring to avail themselves of these facilities are to apply either direct to the general officer commanding the district in which the school is placed or to the officer commanding the nearest depot.

It is held to be desirable that each teacher in any school should learn to drill his or her own class, and should be primarily responsible for its physical training as for any other branch of instruction. Drill should be an open-air exercise. It should be conducted as a rule in a playground and only in bad weather indoors. The first fine days of the week, it is suggested, should be utilized for this part of education. In case of continuous bad weather, and where the school itself does not possess the necessary space indoors, recourse should be had to a town hall, village institute, parish room, barn, or any other suitable building. There is no necessity for any expensive apparatus. Staves and wooden dumbbells are, it is pointed out, very cheap—a piece cut off the end of broomstick makes an excellent dumbbell. Dumbbells cannot well be too light; indeed, a piece of cork or wood to grasp with the hand is quite sufficient. It is estimated that only about 1 per cent. of ordinary school children are unfit for physical training,and it is advised that a medical opinion should be assured before assuming that a child should be wholly exempted, for there are many weakly children for whom regular physical training is highly desirable.

Games, it is said, however valuable in themselves, do not properly fill the place of organized physical exercises even in country schools. Organized games, such as cricket and football, can generally be played only by a minority of the children, and almost necessarily exclude or fail to reach those most in need of development. The only way of reaching all the children, and making the greatest use of the small space generally available, is by some form of regular combined exercise, such as that proposed in the model course. Country children profit by regular bodily training quite as much as town children. They are fully as liable to stoop, to be round-shouldered and to be slovenly in gait and carriage, while they are specially apt to lack mental and body alertness. No part of the time assigned to these exercises should be wasted on what is merely spectacular or entertaining, but every exercise should have its peculiar purpose and value in a complete system framed to develop duly all parts of the body. A private society—the Lads' Drill Association, whose good work has been noticed in our pages—has decided to issue certificates of competency to those teachers who satisfy their tests as instructors in the "model course."—*Brit. Med. Jour.*

DIPHTHERIA BACILLI IN WELL PERSONS.

We have before us the report of a committee of the Massachusetts Association of Boards of Health on "Diphtheria Bacilli in Well Persons." This subject is one of the utmost importance and of wide general interest. It is the common experience that diphtheria bacilli frequently persist in the throat and nose of patients some time after recovery, and even persons not clinically diseased may, in many instances, harbor virulent bacilli. These facts are stated in the report to be quite in harmony with our knowledge concerning the relation of disease germs to the individuals liable to their attack It has been the object of this committee to determine the frequency of the different forms of diphtheria-like bacilli in healthy persons and, secondly, the virulence of the different forms. A number of bacteriologists were requested to examine separate cultures from the nose and throat, according to the classification of Dr. F. F. Wesbrook, which is described in detail, and their reports have been carefully tabulated. The object of using a single satisfactory classification was to eliminate the personal equation to a great extent.

We regret that space does not permit us to discuss at length the bacteriological phases of the problem, i.e., the variations in form of the diphtheria bacilli and their virulence. The practical side which the question presents has been well considered, and two main conclusions are formed. It is stated that it is impracticable to isolate well persons infected with diphtheria bacilli, if such persons have not, so far as known, been recently exposed to the disease. The second conclusion is equally important. It is not advisable, as a matter of routine, to isolate from the public all the well persons in infected families, schools and institutions. Children of infected families should remain on their own premises, if possible. Wage-earners may usually be allowed to continue their work, unless they are brought into close contact with children. It is important to educate both children and adults in the necessity of properly caring for their persons and their secretions so as to avoid as far as possible spreading of the infection, The practical difficulties in the way of isolating well persons who are carrying virulent bacilli in their throats are very great, and much hardship to the individual may thus result. The report before us handles the subject broadly and with due regard for the right of the individual and the community in which he dwells.—Editorial, *Phila. Med. Jour.*, September 20, 1902.

TWO CASES OF NEPHRECTOMY FOR SARCOMA OF THE KIDNEY IN CHILDREN, WITH OPERATIVE RECOVERIES.

Robert G. LeConte reports two cases of nephrectomy for sarcoma of the kidney in children, with operative recovery, at length, and concludes as follows:

1, With modern methods the immediate mortality of the operation should be reduced to 15 per cent., or even a little lower.

2. Operation should prolong the average duration of life, dating from the first symptom of the disease.

3. The percentage of cases that will go three years or more without a sign of recurrence, the so-called cures, will be very greatly increased, if the physician can make an early diagnosis and can be assured of the fact that an immediate operation is proper and justifiable.

4. When the ultimate results are fatal, the operation relieves the suffering of the patient, and makes death less painful.

Twenty years ago cancer of the breast was considered an almost hopeless condition by both the physician and the surgeon. But how different are our views today, since surgery has proved that many cures can be effected when the disease is seen early and the removal is thorough.

Perhaps in the future the same brilliant results may be recorded for this operation, when the profession has concluded that the operation is justifiable, and gives a reasonable chance for a cure. At present the status for the operation is certainly very much better than the English opinion of it, as voiced by Keith. He states that "in young children it is doubtful whether it is ever right to operate; indeed, such operations must be looked on as surgical possibilities rather than as operations of advantage to the patient." By way of retort Abbe might point with pride to two of his cases, one aged 14 months and the other 2½ years, both of whom were living and well at the end of three and a half and four years respectively. *Exchange.*

PEDIATRICS

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EDITORIAL COMMENTS.

Detachment of the Tenth Rib

From time to time during recent years in the foreign journals the clinical significance of detachment of the cartilage of the tenth rib from the ninth, i.e., its conversion into a floating rib like the eleventh and twelfth has been mentioned. The *coryphæus* of the new doctrine (if we may dignify the matter with so serious a word) is Dr. B. Stiller. In one of his more recent papers on the subject (*Deutsche Med. Woch.*, May, 1902) he restates his claims in brief as follows: In a certain class of cases the anterior end of the cartilage of the tenth rib becomes partly absorbed, and its attachment to the thoracic outlet severed. The detachment occurs often early in life and may be even congenital. When found it signifies that the patient is foredoomed to (1) general atony, (2) neurasthenia, (3) dyspepsia of nervous origin and (4) enteroptosis. Stiller claims to have observed the condition in an immense number of instances,—always associated with one or more of the diseases mentioned. He thinks it should always be searched for as a routine measure and that its presence has marked diagnostic and prognostic value. In children particularly it should be looked for with great care, and when in evidence such children should be trained, fed and reared with unusual circumspection in order to counteract a dangerous tendency.—We would not be understood as endorsing the writer's views with our present knowledge of the subject, but certainly it should not be dismissed until a fair investigation by many different observers in different parts of the world have demonstrated its truth or falsity. B.

"Malaria" in the Horse

It may not be undesirable, in view of the constantly recurring question, whether human malaria has ever been discovered in any of the domestic animals, to canvas briefly the present knowledge of the hæmatozoa of the horse. The following remarks are mainly quoted from one of the most competent and well-informed of living observers, Laveran (*Comptes Rendus de la Soc. de Biol.*, 3, 1901):

In the most malarious regions of Algeria and the Roman Campagna horses stabled in the immediate neighborhood of infected human beings, with abundance of infected *Anopheles mosquitoes* at large, have been repeatedly examined for the human plasmodium, and always with negative result. No successful inoculation of the horse with human malarial parasites has ever been reported, though the experiment has been often repeated and though similar inoculations from man to man have been usually successful.—The tsetse fly disease of South and West Africa, affecting both horses and ruminants, has been long understood to be due to an entirely different parasite.

From the same continent, (Africa) however, cases of hæmatozoan infection of the horse have been latterly reported, and the parasite has been described by Laveran and named *Piroplasma equi.* This parasite is a small round mononuclear body, staining without much difficulty, and found almost always *in* the red cell. It appears to divide in the usual karyomitotic fashion, and erythrocytes may be found containing one, two, or four (rarely more) parasites. Pigmentation is absent. The animal infected may be severely ill.—The biologic affinities of the organism seem to be closest to *Pirosoma bigeminum*, the germ of Texas cattle fever, but no insect host has so far been discovered.

A single additional note in the *Deutsche Med. Woch.* for 1900 may or may not be of significance: One or two German observers in South Africa have found that horses ill of "malaria" (parasite not described) furnish a serum which will immunize man to the invasion of the plasmodium even under the most favorable conditions for the development of the latter parasite. This claim has received no further notice, so far as we know, for two years past, and has not been confirmed by other observers.

Veterinary journals contain from time to time indefinite mention of "malaria" in horses, but their reports have been uniformly incomplete, and have usually emanated from doubtful sources.

So far as present knowledge goes there is no ground for believing that the horse is ever a host for the *Plasmodium malariæ*. It might be well, however, to note a suggestion recently made by an accurate and original observer of mosquitoes, Mr. Wm. P. Seal, of New Jersey. Mr. Seal has noted frequently that an anopheles in broad daylight will frequently hang on horses in harness and while gorging itself with blood will be carried long distances through town and country, thus occasionally (if it chance to be already infected) causing the appearance of malaria in a region many miles distant from other cases. B.

The Committee on the Prevention of Tuberculosis of the Charity Organization Society

The Charity Organization Society's Committee on Tuberculosis state in a recent circular letter that it needs not less than $10,000 to meet the expenses of the work which it has undertaken. The expenditures to be made by the committee will be for the following main objects:

1. Research into the social as distinct from the medical aspect of tuberculosis;—for example, into the relations between the disease and overcrowding, infected tenements and unhealthy occupations, and also into the influence upon recovery, of improved diet and hygienic living.

2. Education.—The publication of leaflets and pamphlets, the giving of lectures and the promulgation in every possible way of the fact that tuberculosis is a communicable and preventable disease; the widest distribution of the results of scientific research in this field, and of the results of modern treatment both in sanatoria and at home.

3. The encouragement of movements for suitable public and private sanatoria both for advanced and for incipient cases; for adults and for children; for free care and also for the care of those who can pay moderate fees.

4. The relief of indigent consumptives by the provision of suitable food and medicines, by the payment of rent when this is necessary to secure adequate light and air, and by transportation and maintenance at a distance, when in the judgment of the committee this is essential.

The labors of the committee will be directed not only towards the amelioration of the condition of the large class of consumptives, but also towards the benefit of the community as a whole in which there is encouraging reason to believe that tuberculosis may be practically eradicated. The work of the committee is not intended to be temporary merely, but its continuance and effectiveness will depend upon the public encouragement and support received.

Tachiolo in Ocular Affections.

A. Benedetti (*Jour. A. M. A.*, Aug. 9, 1902) presents the results of his experiments with the fluorid of silver, a salt discovered by Paterno in 1901 and to which the name tachiolo has been applied. He finds it useful as a collyrium, in solutions varying in strength from 1:1,000 to 1:100. Solutions of greater strength than the latter produce irritation. He finds instillation of this salt very useful in cases of catarrhal conjunctivitis, owing to its antiseptic potency and to its superiority over nitrate of silver.—*Am. Med.*

ORIGINAL ARTICLES

ON THE VALUE OF RESPIRATORY EXERCISES IN THE NASO-PHARYNGEAL LESIONS IN CHILDHOOD.*

W. ARBUTHNOT LANE, M.S., F.R.C.S.,
Surgeon Guy's Hospital and Hospital for Children, Great Ormond Street.

YOUR distinguished President did me the honor of asking me to open a discussion on "The Value of Respiratory Exercises in the Nasopharyngeal Lesions in Childhood." I accepted the invitation very reluctantly, knowing that there are so many far better fitted than I to express their views on this subject. At the same time I felt reconciled by the knowledge that the fact of my opening the discussion in an inefficient or imperfect manner in no way detracts from the value of the remarks of those that may follow me, while it will afford me the great advantage of hearing directly from them their views and experience about a subject in which I have been for a long time very much interested. I feel, however, rather at a loss to know what to say in the short time at my disposal and how to attack the subject most advantageously. I have written a good deal at different times on the mechanical factors that determine the development of the bones of the face, and have shown that the pressure exerted by the air in its passage to and fro through the nasopharynx is the chief factor in the development of that cavity and of the bones which surround it. I have described the several deformities which are associated with any diminution or exaggeration in the action of the several factors, all of which are of very great interest, both to the surgeon and physician as well as to the dentist.

I have endeavored to demonstrate that the primary factor which antedates any lengthy interference with the pressure exerted by air on the walls of the nasopharynx is a reduction of the amount of air which habitually passes in an out of the lungs, or, in other words, is a diminution in what is commonly called the vital capacity of the individual.

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*Reprinted from advanced sheets furnished by courtesy of the British Medical Journal.

For some reason or another the child ceases to change a full volume of air during the respiratory process, the thoracic mechanism falling completely, or almost completely, into abeyance, the diaphragm and abdominal muscles alone effecting such amount of aeration of the lungs as continues to exist. The strength of the individual and the resisting power to the entry of organisms into the tissues of the body are reduced proportionately with the diminution or want of completion in the oxygenation of the blood, and consequently in the nutrition of the several tissues.

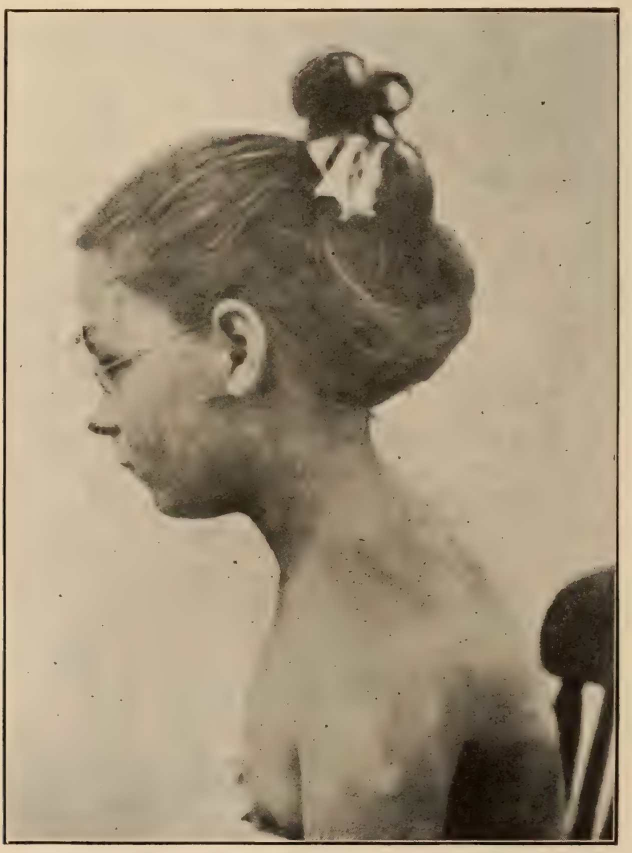

FIG. 1. Photograph of girl, aet. 12, illustrating respiratory incapacity and superior protrusion.

The nasopharynx is the part of the body which in children shows itself most accessible to the invasion of organisms. In consequence of their obtaining a foothold in it, all the symptoms of what is popularly described as a cold in the head and throat manifest themselves. If the vigor and energy of the child is not improved, the organisms remain there permanently in possession; or if driven off for a time more or less completely they return at intervals. In any case their presence helps to depreciate still further the energy and respiratory capacity of the sufferer. The invasion may spread to the larynx, trachea, bronchi, or alveoli and do still more harm.

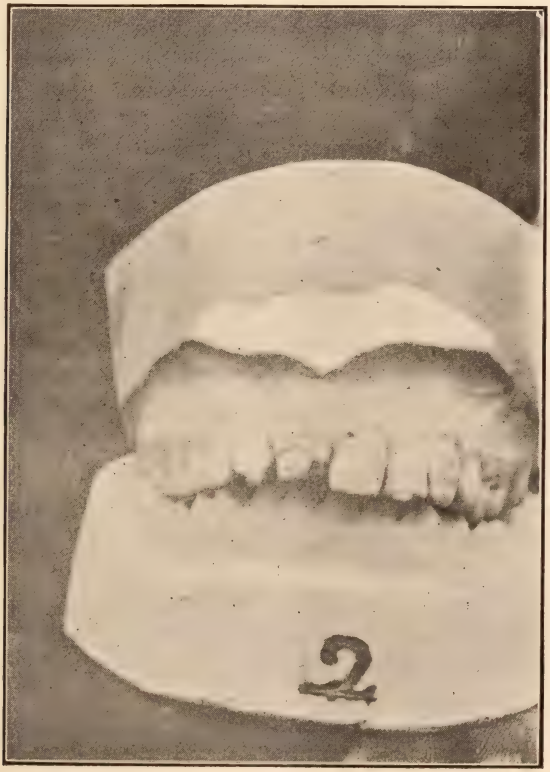

FIG. 2. Cast of girl shown in figure 1.

With the absence of the pressure which is exercised on the sides of the nasal cavities and of the upper part of the pharynx the following changes are seen to occur:

1. A narrowing of the alveolar arch.

2. An increase in the height of the palate along the middle line. In a child who was congenitally defective, who had no nose and no anterior nares, and whose nasal cavities were very imperfectly developed, I found that the palate presented the same mesial elevation which is associated with the acquired imperfect development of these spaces later in life. This does not usually appear before the child is three or four years old.

3. A diminution in the breadth and height of the nasal cavities.

4. Lateral compression of the anterior nares, the outer margins of which show no appreciable movement during respiration.

5. The mouth is kept habitually open, the upper lip covering only a portion of the incisors instead of projecting below their free margin.

6. The temporary teeth decay rapidly; this results partly from the collection of food and epithelium in the space between and about the teeth and gums, which are desiccated by the excessive ventilation of the mouth, also because the ill-nourished gums and periodontal membrane are unable to resist the colonization of their tissues by the organisms thriving in the decomposing material accumulated upon them. The desiccation of the mucous surface of the fauces and of the pharynx sets up further infective changes in it, which with those in the mouth produce an enlargement of the faucial tonsils and of the lymphatic tissue in the pharyngeal walls.

7. The passage into the stomach of these organisms and their products in the decomposing food and in the epithelial debris which collects so readily on the spongy gums and carious teeth produces an unhealthy condition of the mucous membrane of the gastrointestinal tract already badly nourished by imperfectly oxygenated blood. In this way, also, is the vitality of the individual depreciated still more.

8. In association with the infection of the mucous membrane of the nasopharynx there ensues an inflammatory condition of the lymphatic tissue of the upper part of the pharynx, comprising the pharyngeal tonsil. When this structure is inflamed it is, as you know, called adenoids, a term which has attracted to this condition much attention and to surgery a fair amount of discredit. In a certain proportion of cases where the enlargement of this structure has existed for some times, and is consequently associated with a considerable degree of

imperfect development of the nasal cavities, its removal is called for in order to allow a free air passage through the nasopharynx. There is also an infection of the cervical lymphatic glands into which drain the lymphatic vessels of the mucous membrane and the adenoid tissues of the nasopharynx, mouth and fauces. These glands, whose nutrition and vitality are depreciated in excess of other structures of the body by the presence of organisms and their products, form an excellent cultivation medium for the tubercle bacillus. This thrives in their serum-laden tissues free from the combative action of those cells which in the normal state are able to deal with it successfully.

9. The perfection of the auditory apparatus may be impaired or destroyed by any interference with the lumen of the Eustachian tube and with its function. Quite apart from this, perfect hearing can only be carried on when the nasopharynx is fully developed, and any want of development of it is frequently associated with a corresponding imperfection of this sense.

10. Associated with the lateral compression of the alveolar arch there is very frequently a diminution of the length of the alveolar margin. When this is the case as the permanent teeth come through they often find that the alveolar margin in the upper jaw is too short and the space allotted too limited to accommodate them in any regular order. Consequently they appear very irregularly and the resulting objectionable deformity produces a mechanism which is most inefficient as far as the normal function of the teeth is concerned. A certain amount of open-bite is very often associated with this irregularity. If the teeth appear with more or less regularity the upper incisors may be displaced forwards and protrude much beyond those in the lower jaw forming the condition to which the name of superior protrusion is applied. The causation of open-bite is of very great interest to the dental surgeon. It is brought about in a variety of ways, being in the first instance due to inaccurate mutual adaptation of the teeth of the upper and lower jaws.

11. As these children find a difficulty in chewing their food owing, in the first instance, to ill-developed, insecure and carious temporary teeth, and to the lack of energy associated with imperfect vitality and want of appetite the food is taken in a soft form or bolted. Consequently the muscles which move

the tongue and lower jaw are but little used, and the tongue does not develop but remains small. As the lower jaw is chiefly dependent for its complete development upon that of the tongue it is smaller than normal and its small size helps to exaggerate the appearance of superior protrusion. When the tongue is abnormally large it produces a condition called "underhung bite," and in male children underhung bite is occasionally seen associated with all the deformity of the upper jaw resulting from an imperfectly developed nasopharynx.

The frequency of hand feeding, the prolonged feeding with prepared soft foods, and the tendency among medical men to advise that the use of the so-called rubber comforter be discarded and that the thumb be not sucked are largely responsible for the small size of the tongue and of the lower jaw. Curiously enough the high palate and other conditions present in superior protrusion have been attributed by dental surgeons and others to the use of comforters, or to sucking the thumb.

This want of development of the tongue and lower jaw and the condition resulting from it are always more noticeable in girls than in boys, who, at an early age, contrive to obtain harder food and devote more energy to its attrition. Consequently, all the deformities of the face can be studied with greater advantage in the female than in the male.

For this reason, as well as for the fact that boys escape at an earlier age from their mothers and nurses, and accommodate their habits of activity as much as possible to those of their own age, the condition of imperfect development of the nasopharynx and of the low jaw is therefore very much less frequent and less marked in boys than in girls.

Other associated conditions are the puffy, darkly congested lower lid, the laterally compressed nose, if prominent, or tip-tilted if broad and short, the hollowed cheek, the diminution in breadth of the face owing to the want of prominence of the malar bones, the rounded angles of the lower jaw, etc.

I think I have said enough to show that all these troubles may be avoided altogether in the large majority of cases if proper measures are adopted from the first, or if they have developed they may be removed or very greatly diminished by proper attention to the aeration of the lungs, the ventilation of the nasopharynx, and to the proper performance of the functions of the body. As one would naturally expect, the benefit gained by such treatment varies inversely with the duration of the troubles indicated.

When adult age is reached we have innumerable local and secondary troubles which arise in consequence of an ill-developed nasopharynx, to say nothing of the aesthetic and financial disability, a concomitant by no means to be despised in the struggle in which the sexes are engaged to obtain a livelihood or a husband. They are also largely exaggerated by any depreciation in the vigor of the individual, by certain surroundings and occupations, and in innumerable ways which I cannot enter into here. Much relief can be obtained by suitable treatment, and surgical measures may often alleviate materially the troubles that have arisen owing to want of knowledge and want of attention of those who had the care of the individual in early life.

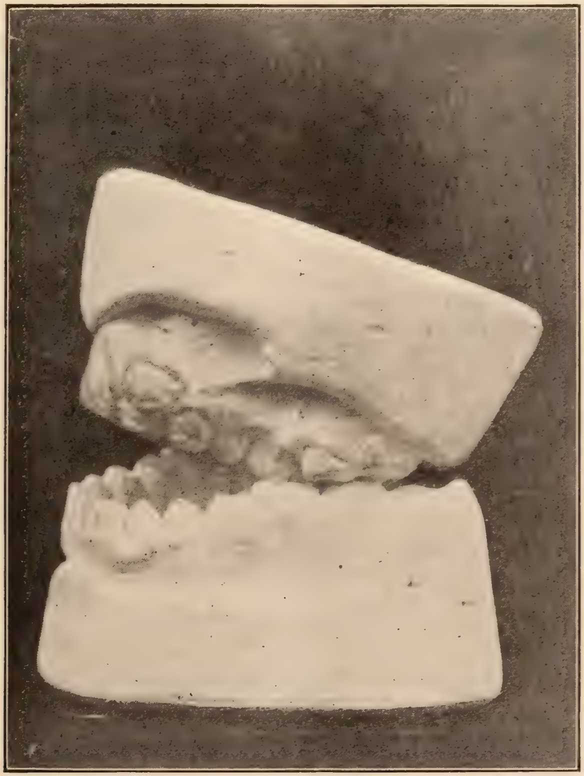

FIG. 3. Cast of "open bite" produced partly by imperfect development of the naso-pharynx, partly by a very large tongue.

It is generally assumed that it is indecent for the young of the female sex to receive any instruction on her internal anatomy and on the manner in which her organs perform their functions. A girl is only supposed to evolve in some peculiar way the requisite knowledge of the mode of bringing up a child when it makes its appearance.

It is obvious how vastly more important it is to attend to the physique of growing children than to stimulate their badly nourished and poorly oxygenated brains, to expend extravagantly valuable energy upon what is termed education. It is foolish enough in the case of the male child, who has innumerable athletic attractions which fortunately distract his attention from study; but for the female, whose physical associations are largely with women of mature age and sedentary habits, who is building up a suitable framework with energy to produce, to nourish and to look after her offspring, it is a horrible travesty of common sense. Not uncommonly, so-called gymnastics are introducéd as a part of the physical education of the child, but in the case of the girl, especially, it merely means a further extravagant expenditure of energy wasteful in the extreme, and usually only harmful. Even the Chinese, with their mania for education and examination which we have imitated, leave their unfortunate female progeny alone in that respect.

(For discussion vid. PEDIATRICS, vol xiv, No. 7, p. 275).

Cheloid in Vaccination Scars.

Henry Wiggins (*Brit. Med. Jour.*, September 27, 1902) reports two cases, one a girl of 8 years, the other a girl of 14 years, whom he vaccinated in three places. The vaccination took well and followed the usual course. A few weeks later cheloid developed in each cicatrix. The lymph was the same that the writer had used for years. These were both primary vaccinations. The rest of the large number of cases that the writer vaccinated, to the best of his recollection, were revaccinations. All of these gave most satisfactory results.—*Med. Rec.*

THE AFTER-TREATMENT OF ERASION OF THE KNEE-JOINT.

By Joseph Collier, B.S., F.R.C.S.,
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THE operation of erasion for tuberculous disease of the knee-joint, first performed by Wright, at the Pendlebury Hospital, has not come into such general use as it has deserved. Much of the disfavor is due to want of care in the after-treatment, with the result that later the joint becomes fixed in flexion of more or less severity. In none of the Manchester cases has a lateral displacement occurred. The patella should therefore be kept freely mobile from the first and should be prevented from becoming adherent to the front of the femur. The tendency to flexion after erasion is mainly, though not solely, due to the contraction of the hamstrings, the function of the muscles having been in no way interfered with by the operation. This inclination to flexion, present from the first, is of course much greater as soon as the patient begins to walk. With each stride the usual physiological sequence of contraction of muscles acting upon the knee takes place, with the alternating effort of flexion and extension. The quadriceps extensor, however, can have no action in the joint if the patella be glued to the front of the femur. With each step there is thus a pull towards flexion without any following pull towards extension, and gradually the adhesions in and around the joint yield and fixity in flexion resulted. It is therefore to be urged that, at the first dressing, two to three weeks after operation, after the skin sutures are removed, the limb should be fixed in plaster in full extension, but that a window should be left in the plaster over the front of the joint in order that several times a day the patella may be moved from side to side to prevent its becoming adherent to the femur. At the end of from four to six months the limb should be taken out of its casing and if it be found that there is a voluntary power of extension when the limb is lightly flexed, the patient may be allowed to walk without support, the surgeon resting assured that though the flexion will certainly increase, as certainly there will be a power of extension, and thus a growing return to the natural mobility of the joint. If there be no power of voluntary extension then the patient ought not to be allowed to use the limb unless some form of apparatus be worn to keep the knee in almost complete extension, and this should be worn for at least two years. There should be no forcible attempt to restore mobility, even if the patella be kept free, for such attempts will produce further adhesions with patellar fixation. Mobility through a range up to the right angle flexion will in the majority of cases be obtained by the above method, merely from usage. The excuse for bringing forward so small a point is the success which has attended its adoption, the patients being able to walk with hardly a perceptible limp and able to sit with greater comfort in that the knee can be flexed.

DISCUSSION

Mr. H. J. Stiles was himself in the habit of excising the knee according to the method of Kocher. He thought it necessary to divide the crucial ligaments if all the disease was to be removed, and having done this he thought it was safe to aim at a rigid joint. After what Mr. Collier had told them he should be glad to give his method a trial.

Mr. Jordan Lloyd thought it was quite practicable to remove the whole of the disease from a tuberculous joint. The crucial ligaments had usually to be sacrificed and their removal was not necessarily followed by complete ankylosis. He disapproved of knee-joint excisions in children, as the after-results in his hands had not always been satisfactory.

Mr. Collier, in reply to Mr. Harold Stiles, said he made a transpatellar incision, the patella being sutured with catgut before the joint was closed. He was aware that in Glasgow and in other places the operation was objected to partly on the ground that tuberculous disease in the knee-joint began in the bone in most cases, but in his experience this was the reverse of the truth, and after the performance of a large number of erasions in which of course the joint was fully examined, he could state dogmatically that in the knee in the great majority of these cases the disease begins in the synovial membrane. As to the definition which was asked for, he distinguished between erasion and excision, reserving the word erasion for those cases in which the main feature of the operation was the removal of diseased synovial membrane and in which if any cartilage or bone were removed it was only done to a slight and subsidiary extent. He considered that by erasion the whole of the disease could in most cases be removed, though to do so effectually it was usually necessary to remove at least the anterior of the crucial ligaments. In patients whose means enabled them to procure prolonged and skilled attention erasion could be rarely required, but in hospital cases, where often prolonged care was impossible, the operation had proved itself a success. In such cases he would consider evidence of caseation, as shown by local doughiness, nocturnal rise of temperature, or even merely by chronicity of the condition if the persistence were in spite of appropriate treatment, as sufficient indication for operation. He was grateful to Mr. Stiles for promising to give the operation a trial, and agreed with Mr. Jordan Lloyd that without great after-care flexion of the knee might follow excision as well as erasion, and mentioned in conclusion an interesting case in which six years after an excision of the knee-joint in an adult he had the opportunity of examining post-mortem the condition of the part, and found firm bony ankylosis with the medullary canal of the femur continuous with that of the tibia.

(For discussion, see PEDIATRICS, Sept. 15, 1902).

Some Neuroses in Childhood.

G. A. Sutherland (*Edin. Med. Jour.*, September, 1902) writes of the nervous diathesis which is manifested in various ways, among others by local disturbances of function known as neuroses, and describes illustrative cases of functional tremors of the arm, spastic contraction of the right leg, functional aphonia and eructation, functional paraplegia and functional difficulty in swallowing. Treatment should consist in removal from home, of isolation with a trained nurse. The child should be encouraged to use mind and body, and talking about ailments should be discouraged. All hygienic measures are to be employed, and, above all, the child should be taught self-control.—*Medical Record.*

A NOTE ON THE OPERATIVE TREATMENT OF FLAIL PARALYTIC ELBOW.

By Robert Jones, F.R.C.S.E.,
Honorary Surgeon Royal Southern Hospital and Liverpool Hospital for the Chronic Diseases of Children.

A LARGE number of cases come under our notice where all the muscles governing the elbow are paralyzed and yet movements are permitted to the hand. The hand, however, is rarely used because of its posture, hanging as it does, a mere mobile pendant to a flail arm. If the patient wishes to use the hand he can only do so by lifting the paralyzed forearm into the desired position. It is therefore useless for feeding purposes. To obtain fixation of the elbow at an angle is a great advantage in such cases. The position which is generally desirable is an angle somewhat more acute than a right angle.

An extensive diamond-shaped incision is made involving the lower third of the arm and upper third of the forearm. The skin mapped out in this incision is removed. The upper angle is stitched to the lower and the edges of the triangle of the lower arm attached to the edges of the triangle of the lower arm attached to the edges of the triangle of the upper arm. The elbow is acutely flexed and the bare surface of the lower triangle lies in a juxtaposition to that of the upper triangle. In this way a scar is formed which quite effectively retains the elbow in such a position that the hand may be employed to useful purpose.

I have now operated upon five cases with considerable success, although sufficient time has not elapsed to finally test the rigidity of the scar. One case operated upon two years ago and another eighteen months ago have maintained without change the flexion angle at which they were placed. Cases of contraction after burns bear out the correctness of our practice, for most surgeons know the severity of deformity which sometimes occurs without involving a large skin area at the bend of the elbow.

In two cases interesting phenomena have followed. Paralysis was thought to be complete in the biceps and branchialis anticus, but a few months after the arm was fixed flexion power was restored to the elbow, dependent in part on restoration of the functions of these two muscles. The power was doubtless increased by postural release from strain, a potent factor in the restoration to usefulness of a paralyzed muscle.

A sling is all that is needed by way of treatment, but its use should be continued for some months.

(For discussion, see PEDIATRICS, Sept. 15, 1902.

Pertussis and Scillitic Oxymel.

About fifty-seven observations have been collected by Boulade in the Children's Hospital, Paris, and made the topic of an inaugural essay by J. Comby (*Sem. med.*, September 24, 1902), concerning the use of scillitic oxymel in the treatment of whooping cough. This medicine is prescribed in its pure condition, as originally suggested by Netter, of Nancy, in 1886, in a dose of two after-dinner coffeespoonfuls for each year of the child's age, and is administered preferably between five and six o'clock in the afternoon. He reports that he has never failed to decrease the number and intensity of the attacks, and to give the child comparatively quiet nights. Unlike belladonna and atropine, its usefulness continues throughout the course of the disease and appears to exercise a direct influence upon the evolution. Moreover, the medicine is ordinarily taken well by the little patients and has the advantage that it can be borne perfectly well by the average city patient.—*Med. News.*

Consanguineous Marriages.

It is stated that in order to stop the degeneration of European royal families over whom he has jurisdiction the Pope will hereafter grant no more dispensations for consanguineous marriages.—*Jour. A.M.A.*

INFANTILE MORTALITY.*

By E. M. Brown, M.D.,
Sheldon, Vt.

WHILE death at all ages of life is present in our midst, there are two periods in which its dangers are especially imminent—that of infancy and old age. Death, however, at a ripe old age does not seem half so grievous as it does when it snatches life from the infant, a being that is created and endowed with an organism which, if properly nourished and protected, is good for a period of seventy or eighty years of usefulness and progressive possibilities. The present enormous rate of infantile mortality is a blot upon the intelligence and scientific research of the nineteenth century. Vital statistics tell us not more than 50 per cent. of all babies born into the world ever reach maturity, and that does not include the large per cent. of still-born, premature and abortives who never see the light. In England there is 1 death in every 5 births before the child has a year of age. In France 21 and 7-10 per cent. die by the end of the first year, and out of over 60,000 births annually in Paris, the half die before they reach four years of age, and in the poverty-stricken classes the death-rate is much larger—even 70 or 80 per cent. In Greater New York, with a birth-rate of almost 75,000, nearly 20,000 die in their first year.

Dr. Rotch, in his "Manual of Infant Feeding," asks: "Now is this mortality a necessary evil? I believe not; and to prevent by any means the great infant mortality is a work well worthy of a philanthropist."

Dr. Henry B. Baker, secretary of the Michigan State Board of Health, writes in his most excellent report of 1897: "Infantile and child mortality is a great waste of the human emotions, also a great waste of money. The losses are incurred before opportunity has come for any pecuniary return. Humanity and public economy unite in dictating that all preventable infantile mortality shall be prevented. I believe it is true that vital statistics and sanitary science lead us to the belief that a large proportion of the infantile mortality is preventable."

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* Read before Vermont State Medical Society.

Dr. Hugh Jones, in a prize essay (written some years ago), tending to prove that infantile mortality is largely due to ignorance, produces a table showing that in New England and the Middle States the infantile mortality from cholera infantum and diarrhea was in proportion to the illiteracy of the parents.

Within the past few years many of our large cities have by scientific and systematic inspection and supervision of the milk supply, materially diminished the death-rate in children.

The present, it seems to me, is the beginning of an age when the true value of infant life is to be appreciated. If the old Anglo-Saxon stock is to be perpetuated more babies in this line must be born, and fewer babies die after they are born, and it is in the province of the medical professor to educate the people and to provide means to this end.

It was my purpose when I started out with this short paper to show, by a statistical collection and report, the difference in the rate of mortality between the infant fed upon the breast and those artificially fed. But I find that such statistics are difficult to obtain. In fact, by persistent effort for over a year, I could find very little directly on this subject. I am convinced, however, by the recorded opinions of different authors upon children's diseases, that such a record would be very instructive, and, I think, surprising to most of us in its showing. I wish as a State we might take the initiative in this comparison and compilation. It is plainly nature's law that every woman should bear children, and that every mother should suckle her babe. That there are exceptions to this law does not lessen the obligation for those who are qualified for such duties; and the benefit to the healthful mother by lactation is secondary only to that to the infant at her breast.

Rotch says that "hand-fed children are much more likely not only to be weakly and improperly developed, but also that the chances of life are much smaller for them than for children who are suckled by a healthful mother."

Professor Caillé, of the New York Post-Graduate, in a personal letter, conservatively writes: "About 20 per cent. of acute gastroenteric troubles occur in children at the breast, and the mortality is three to four times greater in bottle-fed babies. The power of resistance to all forms of disease is greater in breast-fed children."

Dr. Lewis Starr, in his American text-book on "Diseases of Children," writes that "feeding from the maternal breast, being the natural, is the proper method of nourishing the human infant, and every mother who is able should nourish her child solely from the breast up to the age of eight months, and partially to the end of the first year, or failing in either limit, do so as long as possible."

Dr. Vaughan, of Ann Arbor, Mich, writing upon infant feeding, says: "Treatment intelligently carried out would save thousands of lives annually in our large cities. The best of all these measures is that the mother should nurse the child, and the mother who allows anything short of absolute inability to prevent her doing so places the life of her child in jeopardy."

Dr. Alexander Briggs, of Rhode Island, says: "It is estimated that over 70 per cent. of deaths from all causes in children under two years of age are due to some abdominal disease, and of this number over 30 per cent. are due to some disease arising from defective and faulty nutrition, and many times the healthiest children when deprived of breast-milk during the first year of life succumb to those diseases."

These opinions are verified and emphasized by every writer upon children's diseases, and writers also concur in the opinion that the temperature of the weather has a positive and direct bearing on the mortality rate of children. September, August, July and October, are the months in which there is the greatest mortality from alimentary troubles,and are named in the order in which the greatest mortality occurs.

In the Michigan State report of 1897 there were deaths reported from cholera infantum during these four months to the number of 734,the rest of the year 156; from diarrhea 200, in the other eight months 34. In Vermont during the year 1900, from cholera infantum, in September 57, August 53, October 22, July 17; total during these four months, 149. In June there were 8, and the rest of the year 16, making a total of 173 deaths, and of these 169 under five years of age. How many under two years of age is not given, but I will vouch that it would include more than three-fifths of the total number, the first and second summer being the danger time.

Infants, however, who are fed only on mother's milk do not die in hot weather in anywhere near the same proportion as do those who are not nursed. Hot weather acts upon the bottle-fed baby in two ways; first, and I presume most frequently, by changing the food before it is taken into the system; and secondly, by reducing the vitality and digestive powers of the infant. It is true there are very few children who have breast-milk during the second summer, but I think the child who is nourished at the breast up to ten or twelve months will be much less prone to succumb to diseases incident to hot weather of the second summer than those who were not.

Prof. A. Jacobi, speaking on cholera infantum, says: "How does heat affect the babies, directly or indirectly? Its indirect effect is best appreciated when it is remembered that breast-fed babies do not suffer like those artificially fed. In the vast majority the feeding is artificial, and with but few exceptions the attacks occur during the hot months of summer."

Professor Memert's observations in Dresden during the hot summer weeks noted 18 deaths in babies wholly breast-fed to 460 not so fed, or only about 4 per cent., which agrees, I think, with what every observing practitioner learns from his own experience.

Again referring to the table of Dr. Baker: Of 4,181 deaths reported under one year of age, 671 were from cholera infantum, 316 from convulsions, 146 from diarrhea, 103 from inflammation of bowels, 90 from disease of stomach, making a total of 1,375, or about 33⅓ per cent. from dietetic trouble.

Again quoting Prof. A. Jacobi: "The most important preventive of cholera infantum, as of other intestinal diseases or disorders, is appropriate and digestible food. In the vast majority of cases this is, for the poor infant, human milk. What I have said a hundred times is still true and borne out by fact, viz., that no matter how beneficial boiling or sterilization or pasteurization may be it cannot transform cow's milk into woman's milk, and it is a mistake to believe that the former by mere sterilization is a full substitute for the latter.

"It is true that when we cannot have woman's milk, we cannot do without cow's milk. There is no allowed substitute that can be had with equal facility or in sufficient quantities. But after all it is not woman's milk. Babies may or may not succumb from using it, but they seldom appear to thrive on it; it is a make-shift after all, and requires modifications."

Hammarsten was among the first to prove that there was a difference chemically between the casein of cow's milk and woman's milk. Wrobolewsky demonstrated the difference in solubility of the two milks. Woman's casein retains pepsin during digestion, its nuclein is in solution and is fully digested. While in cow's milk casein is not fully digested, a paranuclein is deposited undissolved and undigested. "In cow's milk the phosphorus of the nuclein amounts to 6 per cent. of the total amount of phosphorus contained in the milk; in woman's milk 41 and 5-10 per cent. That means that in cow's milk not one-half of its phosphorus is in the organic combination of casein, and in woman's milk almost all of it is. In cow's milk the phosphorus not utilized is containcd in the inferior phosphate."

Quoting from E. Salkowski: "These conditions are evidently of the greatest moment in the nutrition of nurslings, as the development of bones is more readily accomplished in nurslings fed on woman's milk. The probable conclusion is that nuclein has an important part in the absorption and assimilation of phosphorus."

And again Jacobi says: "Though woman's milk contains less casein than cow's milk, more casein is utilized out of the former, and the nuclein is evidently an important factor in its absorption also."

The conclusions which we draw are that the chemical ingredients which enter into combination to form milk are so proportioned and subdivided as to be emphatically adapted to the development of its peculiar kind and species. While the calf, with its powerful digestive ferment and active peristalsis, is able to dissolve the nuclein and completely digest and assimilate it, the human babe, with a much weaker digestion, may be able to digest and assimilate very little of it, and particularly so when the vitality is reduced by the hot weather of summer. And that which is *not* digested acts as an irritant, and often as a violent toxin to the system.

During the cooler months of the year artificial food intelligently and methodically prepared and administered may do very well, but with the careless and indifferent mother or attendant the babe is always subjected to danger.

I cannot refrain from saying a word about the nursing bottle. If the baby is and must be bottle-fed, the physician should lay particular stress on cleanliness and insist that the bottles be sterilized. The bottle with long rubber tubing and nipple should at all times and under all circumstances be condemned as unfit for the use designed. In some State (I think New York) there is a law prohibiting the use of this attachment and if such a law existed and was enforced in Vermont, babies' lives would be saved.

The doctor feels very different when called to see a baby suffering with either acute or chronic gastroenteric trouble, if that child is on the breast, than he would if subsisting in any other way, and his prognosis would be very different also. Could mothers know and appreciate the danger to which they subject their children, by refusing to nurse them, they would be much more willing to submit to the confinement and inconvenience attending lactation.

Enteritis Syphilitica with Melena Neonatorum.

Dr. Esser (*Arch. f. Kinderheilk*, vol. xxxii) writes: In a case of hereditary syphilis in a girl who lived only ten days, the author found besides icterus and melena, osteochondritis, arteritis luetica and enlargement of the spleen, a rare lesion of the intestinal canal which was first emphasized by Dr. Mracek. Macroscopically, the lesion appeared as bloody and dark brown masses in the lower portions of the small intestines, above these the mucous membrane of the jejunum was found covered by ulcerations and greatly hypertrophied. Microscopically he found that besides some arteritic changes in the splenic blood vessel, the mucosa and sub-mucosa of the hypertrophied intestines were twice their normal thickness and infiltrated; the walls of the blood vessels were here too highly affected, so much so that their lumina were completely obstructed. No marked changes were seen in any other organs. The relationship between melena and the pathological condition of the intestinal walls has so far not been ascertained, and it certainly seems probable that such lesions play a very important part in the production of melena neonatorum.—*The Post-Graduate.*

SOCIETY REPORTS

NEW YORK ACADEMY OF MEDICINE.—SECTION ON PEDIATRICS.

Stated Meeting, October 9, 1901.

Rowland G. Freeman, M.D., Chairman.

A Case of Infantile Stridor.—Dr Charles Hermann presented an infant, three months and a half old, affected with that peculiar croaking form of inspiration to which has been given the name infantile stridor. This stridor had been noticed shortly after birth and was most marked after suckling, crying or excitement. There was no evidence of rickets, or indeed of any disease. The stridor was supposed to be the result of mechanical conditions arising from a congenital deformity of the larynx partaking of the nature of an exaggeration of the infantile type of larynx. A few post-mortem examinations had been made on infants having this form of stridor, and who had died from other causes, but no enlargement of the thymus or of the mediastinal glands had been present. The condition is recovered from spontaneously, usually in the second year.

Dr. W. P. Northrup said he had just seen one of these cases. His patient was 5 months old, and the sound, instead of being most noticeable after excitement, was at its maximum during sleep, and was so loud as to disturb other occupants in the house. That, too, was healthy.

Some Observations in the Children's Hospitals of Paris and London.—Dr. L. E. LaFetra read this paper. He found both London and Paris better provided with hospitals for children than New York City, and noted that those in the latter city were peculiarly fortunate in having such an abundance of air, light and ground around them. The staffs of the London hospitals were larger than in this country, thus making a better division of labor possible. Their out patient departments were especially well organized, so that with comparatively little expenditure of time most thorough examinations of the patients could be made. Where laboratory aid was desired for diagnostic purposes, this was at hand in connection with the hospital. There was nothing striking about the treatment employed in these out-patient clinics. In Paris the visitor from this country would naturally be much surprised at the great attention paid to the isolation of patients and to supplying outsiders with gowns to wear while in the hospital, even though not in the department for contagious diseases. In the contagious wards each patient might be said to be in separate isolating rooms, the ward being split up into rooms made by the use of board partitions, not reaching all the way to the ceiling and being glazed on the upper part to allow of light and proper ward supervision. Dr. LaFetra said he was told that scarlatinal nephritis was very rare and that this was attributed to the great pains taken to keep the mouth and upper air passages clean, on the theory that this form of nephritis is due to infection with a special streptococcus. In intubation cases the popular method of removing the tube was by quick external manipulation, a procedure known as "expression."

Dr. NORTHRUP remarked that the popularity of this procedure found a ready explanation in the fact that the French intubation tube is a very different affair from the O'Dwyer tube, being short and provided with a large bulge. The removal of such a tube by expression was comparatively easy.

A Review of Some of the Older Writings on Infant Feeding.—Dr. SAMUEL McC. HAMILL, of Philadelphia was the author of this paper. After speaking of the many well known drawbacks to the employment of wet-nurses, he said that direct nursing of infants by animals had never been very popular, though, to a limited extent, it had been practised. The goat, ass and cow were the animals chiefly used, and it was found that the goat became very docile and even attached to its nursling. The first definite directions for the modification of cow's milk so as to render it suitable for infant feeding had been published by Morse in 1794. He recommended the use of 1 part of cow's milk and 2 parts of water. Many seemed to think that the use of gruels as diluents was of comparatively recent introduction, but a number of the older writers advised the use of gruels for the special purpose of breaking up the curd of cow's milk. In 1825 Dewees recommended using the fresh milk from one cow, diluting 2 parts of the milk with 1 of water and advised that the milk be heated and that it be prepared for each feeding. His teaching was quite generally followed until, in 1853, Meigs published his now famous mixture of cream, milk, gelatin and arrowroot. Another subject of great interest brought out by the speaker was that a serious and scientific attempt to introduce percentage feeding had been made as far back as 1859 by a Dr. Cummings, of Williamstown, Mass. This pioneer pointed out the necessity for varying the dilutions with the age of the child, and argued that as it was necessary to reduce the excess of proteids in cow's milk by dilution a fat deficiency was thereby created, and that therefore this should be made up by the addition of cream. Dr.

Cummins described his method of feeding with great detail, giving formulæ adapted to different ages and needs. Dr. Hamill said that before the introduction of the glass nursing bottle in 1786 a cow's horn was made to do duty for this, and as rubber nipples were then unknown, a nipple was constructed of parchment, or more generally, a hiefer's teat was used to cap the horn. The first reference to a rubber nipple that he had been able to find was in a book by Tanner published in 1861.

The Recent Meeting of the Pediatric Section of the Brirish Medical Association.—Dr. W. P. NORTHRUP closed the meeting by a short talk, in which he gave personal reminiscences and impressions of the British meeting.

THE DIFFERENTIAL LEUKOCYTE COUNT IN THE NEW-BORN.

L. M. WARFIELD (*Amer. Med.*, Sept. 20, 1902) concludes as follows:

1. The leukocytes at the day of birth are more numerous than at any other time of normal life.

2. Nucleated red blood-corpuscles rapidly disappear from the circulating blood of the healthy infant within the first three days of life.

3. The percentage of eosinophiles varies widely in the blood of babies of the same age.

4. Myelocytes and "mastzellen" are only occasionally found and are in very small numbers.

3. The percentage of large mononuclear and transitional cells is large compared to that found in the blood of adults.

6. The polymorphonuclear cells at birth are not only relatively but absolutely increased. They begin to increase in numbers soon after birth and by the eleventh day of a healthy infant's life they are fewer in number than the lymphocytes, while the number of the latter variety of cell has actually increased; and the differential count of the leukocytes on the eleventh day is practically identical with the count given in the text-books as normal for the infant's blood.

ABSTRACTS

SOME OBSERVATIONS ON THE OCCURRENCE AND TREATMENT OF LOBAR PNEUMONIA IN YOUNG CHILDREN.

J. A. COUTTS (*Edinburgh Med. Jour.*, September, 1902) reports the following: The pathology and symptoms of croupous pneumonia in infants are mainly the same as those in adults, any modifications there may be being merely those that might be expected from the younger age of the patients. One special point may here be noticed, and this is the much greater frequency in which the apices of the lungs are the sites of the attack in children as compared with adults.

When the physical signs are ill-developed and the history unreliable, this predilection of croupous pneumonia in infants to attack the apices may afford valuable diagnostic aid in discriminating between the two forms of the complaint, as it is a matter of extreme rarity for the signs of broncho-pneumonia to be limited to, or even to predominate at, one apex.

There is nothing in the nature of a specific treatment of croupous pneumonia, considered as a whole, either in the way of shortening its duration or of modifying its course.

Fortunately, the majority of cases of croupous pneumonia in children call for no active medical treatment. All that is required is rest in bed in a well-ventilated apartment, at a temperature of about 65°, along with careful dieting and nursing. One point in the dieting requires especial care and supervision. The acute stress a croupous pneumonia entails upon the system is sufficiently obvious to all, and nurses are apt to attempt to counteract it by the administration of a greater quantity of food than is at all necessary or desirable. Although the digestive functions are weakened by the acute disease, more food is often administered than the child is accustomed to take in sound health, and this may add considerably to the discomfort and distress of the patient even without there being any manifest signs of digestive disturbance. Especially harmful is a very common practice, that of waking the child from sleep to administer nourishment.

While in a great majority of cases of broncho-pneumonia there is urgent need for alcoholic stimulation, it is only in a small minority of those of croupous pneumonia in children that such necessity arises, and even in these last it more frequently occurs after the crisis than during the acute stage of the complaint.

Another important point is to instruct the nurse to give the child plenty of water to drink.

The principal points in the active treatment of croupous pneumonia in children are comprised in the efforts to control the temperature when excessive, to alleviate pain, to procure sleep and to relieve the strain upon the right heart, Of the methods of reducing temperature by the application of external cold, that of tepid sponging has the advantages of being easily performed and of being generally efficacious and sufficient. The wet-pack is preferred by some authorities, but it has proved unreliable as regards the reduction of temperature. Both sponging and wet-pack are subject to the disadvantage, that the reduction of temperature by their means is occasionally of a very temporary nature, and their necessary frequent repetition may cause great discomfort and disturbance to the patient. Small enemas of water at 75°, or colder, are generally successful in reducing the temperature and in keeping it down longer than either the wet-pack or sponging, but here again the length of time of the reduction may not be all that is desirable.

The value of a single dose of opium for the relief of pain must be considered when the pain is associated with hyperpyrexia and insomnia in the first "shock" of the complaint. In exceptional instances, pain arising from pleural inflammation may call for direct local treatment. For this the application of one or two leeches to the affected side is the most reliable and trustworthy applicative remedy. Any benefits derivable from the ice-bag to the affected side are discounted by the frequent collapse it causes. When leeches are not available then dry-cupping may be used with great benefit. In slighter cases hot fomentations or mustard and linseed poultices may do all that is necessary.

Cardiac failure is the eventuality most to be dreaded in the course of pneumonia and its treatment makes the most urgent demands upon all the resources at the disposal of medical skill and knowledge.

The extreme value of strychnine in such cases is sufficiently recognized and admitted. With the sole exception of alcohol it is the only drug on which any firm reliance can be placed. When all other remedies have failed, alcohol and strychnine in particular, then the advisibility of bleeding should be entertained.

The involvement of the pleura is so frequent that it has led to the use of the name pleuropneumonia by some authorities for the complaint. Regarding the frequency of the affection of the pleura, it is quite possible that a very large proportion of cases in children are even accompanied by a serous pleural effusion, but the presence of small amounts of such effusion is difficult to determine conclusively. Larger amounts of pleural effusion, such as might call for aspiration, only occur in a small minority of cases. Empyemata are much more common than serous effusions of any great amount and their early recognition and treatment are of first importance. It may be safely said that at least 90 per cent. of empyemata in children are due to some form of pneumonia, and the extreme frequency still assigned to tuberculosis for its causation by many authorities is difficult to either understand or appreciate. With empyema the necessity for early and correct diagnosis will not be doubted, as the sooner the pus is evacuated the better for the general health of the patient, and the more hopeful the chance of total re-expansion in the underlying lung. If pus be found and the cavity be deemed a small one then there is a fair possibility of cure by means of the aspirator, used in the earliest stages, this being a distinct advantage when there is any opposition on the part of the parents to a more radical operation. After two attempts with the aspirator, with a short interval between them, if cure be not attained, then the method should be abandoned and the chest opened. With regard to the operation for this last, the usual one of rib resection is the best for older children. With very young children, say under the age of eighteen months, however, the mortality in cases of rib resection is appallingly high. For some years now, simple incision has almost entirely superseded rib resection in the case of infants at the Shadwell Hospital, and with encouraging results. The rooted objection on the part of most surgeons to simple incision, based on the assumption that it is impossible to properly drain an empyema cavity by its means, should give way to ascertained facts. Not only is the assumption of the possibility of satisfactory drainage disproved, but, moreover, simple incision is accompanied by the distinct advantage in such tender subjects, that in most cases the drainage tube can be sooner dispensed with and the wound more readily heals. A short time ago washing out the cavity was universally condemned by surgeons, on the ground that only was it useless, but that cases of fatal convulsions and syncope occasionally occurred during the actual process, and were directly due to it, and that poisoning sometimes took place from the substances employed.

The cases for washing out are ones where the pus is fetid, or where high temperature exists along with a profuse discharge.

THE IDEAL RESULT TO BE KEPT IN VIEW IN THE OPERATIVE TREATMENT OF CONVERGENT STRABISMUS IN CHILDREN.

Samuel Theobald (*Maryland Med. Jour.*, September, 1902) writes as follows:

From the oculist's point of view, to prescribe glasses for a small child, to be worn constantly and perhaps permanently is a matter of little moment, but, especially among the well-to-do classes, the child's parents regard the matter in a very different light. To them not infrequently it is a very serious misfortune, a matter taken much to heart, a source of real distress. And, after all, it must be admitted that this feeling is not wholly without warrant. Uuquestionably, it is a misfortune for a child, whether boy or girl, to be doomed to the perpetual wearing of glasses, for it cannot be denied that the good looks of the girl and the manly appearance of the boy are seriously marred thereby. Such being the case, it seems to me it is the oculist's duty not to lose sight wholly of this aspect of the matter, but in the prescribing or withholding of glasses to give it a measure of consideration and to permit it, within certain limits, to influence his decision.

It is in the management of cases of squint occurring in children that this deep-rooted prejudice against glasses is especially apt to manifest itself. Every oculist doubtless has observed the feeling of disappointment which parents commonly exhibit when told that the successful outcome of a proposed operation for squint will depend largely upon the subsequent use of glasses. To the parent the choice between the squint and the glasses seems little else than a choice between evils of nearly equal magnitude.

In several cases of squint the success which has attended my efforts to regard this parental prejudice has been such as to encourage me to further experimentation in the same direction, and on the whole, to lead me to believe that, oftener than is commonly supposed, it is possible after operating for convergent strabismus to avoid the constant and continued use of glasses. The practicability of doing this will depend of course largely upon the degree of optical error back of the squint, but as there are many cases of concomitant convergent strabismus in which the ametropia is not excessive, the field for such experimentation is not so restricted as might appear at first sight.

Briefly outlined, the method which I have employed is as follows:

A minimum amount of muscle-cutting, usually a free tenotomy of the internal rectus of the squinting eye, which commonly leaves a residual squint.

The correction of this residual squint and the establishment of binocular vision by the careful adjustment of glasses, prisms being not infrequently combined with the spherical or sphero-cylindrical correction in order to encourage binocular fixation.

And finally after binocular vision has been firmly established through a period of several months the gradual withdrawal of the assistance afforded by the glasses, until ultimately the glasses are put aside altogether, or, at most, are worn only in near vision.

In modifying the glasses the prisms are first reduced in strength then withdrawn, then a gradual reduction in the spherical correction is made, until finally nothing is left. The rapidity with which these changes can be effected necessarily varies in different cases, and after each change one should assure himself that binocular fixation is still maintained. The recurrence of the squint or the development of asthenopic symptoms would be an indication that the help afforded by the glasses was being too rapidly withdrawn.

The conditions which make against the success of the method are the existence of a high-grade of hypermetropia, a very considerable amount of astigmatism, decided anisometropia, marked amblyopia in the squinting eye, and above all, that pronounced indisposition to binocular vision which exists in some strabismic individuals and in the presence of which one may congratulate himself if a satisfactory result is secured even with the aid of carefully-selected and constantly-worn glasses.

NOTE OF A CASE IN WHICH THE TIME REQUIRED BY AN INAPPROPRIATE FOOD TO PRODUCE SCORBUTIC SYMPTOMS WAS ACCURATELY NOTED.

D. J. M. Miller writes as follows in the *Phila. Med. Jour.* for Sept. 13, 1902:

Infantile scurvy is now so frequently encountered and so well understood and recognized by the profession in general that one almost feels that an apology is in order when he reports a case of the disease to a society of this character. Not often, however, have we the opportunity, as in the case now reported, accurately to note the time when the scorbutic symptoms developed after the offending food or dietary was commenced. I am aware of no observations on this point in the literature of the affection. The usual history is that after a longer or shorter period of improper feeding the symptoms of scurvy appeared. In the majority of instances the use of the improper diet has been long continued, although Monti states that "several weeks" of such a dietary, as in the case related below, is sufficient to develop the disease. For these reasons, and not simply because of its scorbutic nature, it was thought that the following case would be of interest to the society:

A. S., female, the child of well-to-do parents, was first seen in July, 1901, at the age of 3½ months. The infant was undersized, weighing but 8 pounds (2¾ pounds more than its birthweight). It had been breast-fed for two months, but not gaining in flesh, was then given condensed milk (ʒi) and water (℥iii). On this the weight increased until diarrhea supervened about two weeks before I saw her. Under a careful and painstaking dietary of modified cow's milk, partially peptonized, but not sterilized, the infant slowly increased in health and weight, so that by the following November the weight was 15 pounds, a gain of 6 pounds in the fourteen weeks. During the winter she had several attacks of indigestion the last and severest in the beginning of March, 1902. Atter the trial of various modifications of milk, of whey and milk, and whey alone, condensed milk was commenced in the proportion of 1 teaspoonful to 4 ounces of barley water. This was followed at once by normal stools and improvement in the general condition. In a few days fresh cream was added, and with the other ingredients, gradually increased, until by May 1st the infant was taking 6 ounces of cream, 4 ounces of condensed milk and 35 ounces of barley water (or 1.25 per cent. proteids and 3 per cent. fat) and weighed 17¾ pounds (twelve months old). One week later the mother wrote that for six or seven days the baby had been fretful, sleepless and had refused its bottle. This was attributed to the eruption of one of the teeth. Five days later (May 12th) word was sent to me that there was something wrong with the baby's left leg. On visiting the patient I learned that for 24 hours there had been unwillingness to move the left leg and cries of pain on attempts at motion or when the limb was handled. Examination showed that the anterior and outer aspect of the leg, just above the ankle, was slightly swollen and exquisitely tender to the touch. No other limb was affected. There were no cutaneous hemorrhages, but the nose had bled somewhat profusely, and from no apparent cause, on the two days previous to my visit. The gums over the upper central incisors (there were seven teeth) were slightly redder than natural and on pressure bled freely. The condensed milk was at once stopped and a diet of fresh cow's milk and barley water (1.50 per cent. proteids, 3 per cent. fat, 6 per cent. sugar) was given, with fresh beef juice (1 ounce) and the juice of half an orange daily. Under this regimen the child recovered completely within a week.

The scorbutic symptoms in this case developed therefore exactly 8 weeks after the commencement of the condensed milk, or, if we regard the fretfulness and anorexia which preceded the actual scorbutic symptoms as the real onset of the affection, it took just seven weeks for the improper food to produce the disease. This fact, it seems to me, apart from its intrinsic interest, is of value from a prophylactic point of view,in that it demonstrates how very soon scurvy may develop when we are feeding a baby temporarily, as we are sometimes compelled to do, on condensed, preserved, or proprietary foods, and thus puts us on the lookout when we are so feeding. for the first symptoms of its appearance It must be acknowledged that this infant was in a condition to develop scurvy, being undersized and with a digestion not capable of assimilating the amount of proteids suitable for its age; a deficiency of proteids, i.e., a too dilute food being often a most potent factor in the production of the disease. But before the attack of indigestion which preceded the use of condensed milk, it was getting 2 per cent. of proteids (age of 11½ months) and was, barring the underweight, fairly well, so that it is more than likely that the scurvy would not have occurred had the condensed milk not been given.

A SUBSEQUENT REPORT ON A CASE OF CARCINOMA, DISCHARGED AS HOPELESS AND REPORTED AS A FAILURE.

W. A. Pusey, M.D., in the *Journal A.M.A.*, Aug. 30, 1902, writes as follows: In a report of cases treated with Roentgen-rays, published in the above journal April 12, 1902, I recorded a case as follows:

Case 24.—Man, aged 70, referred to me by Dr. William H. Wilder, with extensive carcinoma involving all the structures in and around the orbit of the right eye. The growth had progressed within the cranium when the treatment was begun. The treatment in this case continued two months, with decided amelioration in his condition for awhile, both as regards the appearance of the growth and his pain, but later evidences of rapid intracranial growth appeared and the treatments were discontinued.

Looking back at this case, it is Dr. Wilder's opinion and mine that we should have taken out enough of the bone of the orbit to have laid bare the structure beneath so that the X-rays would have been thrown directly on the intracranial growth. Dr. Wilder suggested to me that had this been done there might have been a chance of controlling the disease, so marked was the effect on the diseased tissue which was directly exposed.

When this case came under observation the eye was destroyed, the orbit filled with carcinomatous tissue, the orbital bones involved and there was every reason to believe that the disease had extended within the cranium. The clinical diagnosis of carcinoma had been confirmed microscopically by Dr. Wilder. Treatment was undertaken with X-rays with the feeling that there was only the remotest fighting chance.

During the first month that the patient was under treatment the acute pain from which he had been suffering disappeared and the tumor shrunk considerably. During the second month of treatment, however, in spite of the fact that X-ray effects were carried to the point of producing an acute X-ray irritation, the tumor increased and excruciating localized headache appeared. From the character of the headache there seemed no doubt that the tumor was developing rapidly in the meninges and, as the disease was progressing even on the surface where the X-ray effect was greatest and was apparently being uninfluenced by the treatment, we concluded that the case was certainly beyond control and that further treatment was useless. November 23d he was accordingly discharged, having at that time an acute X-ray inflammation over the whole involved area. There seemed every reason to believe that he would die quickly. On April 30th, however, five months after treatment was discontinued, I received the following letter from Dr. T. Sprague, of Sheffield, Ill., to whose thoughtfulness I am indebted for the ability to make this report:

> "Dear Doctor.—I write you regarding the condition of Mr. ——, an old gentleman whom you treated for carcinoma of the right eye, discharged as incurable (if I am correctly informed by Mr. ——) about the last of November. He was a charity patient and I think was referred to you by Dr. Wilder. He called on me on his return from Chicago, had a receipt calling for tablets one quarter grain of morphine, to be taken when in pain. I saw that he had about 20 tablets. I noticed the condition of his eye at that time and concluded from my examination that it was only a question of time, and short time at that, with him. I saw him yesterday and he presents an entirely different appearance. The mass that occupied the orbit has shrunken, allowing the lids to close. He is free from pain, eats and sleeps well, uses no anodyne. There are a few little nodules on the nose near the commissure of the eyelids. With that exception he looks quite well. He has certainly gained since coming home, and I feel assured it is the result of the X-ray treatment. I should like you to see him again, but, of course, his means being limited, he would have to go to the Eye and Ear Infirmary as before.

This case is instructive in at least two particulars. It illustrates very strongly, in the first place, the persistence of X-ray effects. Here is a case in which the effects produced by the X-rays persisted for months after discontinuance of treatment and were sufficient to cause the disappearance of a tumor and at least the symptomatic relief of a case, which upon the basis of all experiences could end only in death within a short time.

EXPERIMENTS WITH LIGHT IN THE TREATMENT OF PULMONARY TUBERCULOSIS.

R. F. Williams, M.D., in *Gaillard's Med. Jour.*, August, 1902, writes in part as follows:

In the beginning of my experiments with light, my apparatus consisted of an arc-light bath. This was a cabinet lined with reflectors, in which the patient sat with the head out. In front and behind the patient were placed arc lamps of ordinary power, adjusted with a long arc, so as to develop the violet ray. The temperature of this cabinet in a direct line between the lights was about 105° F. In other parts of the cabinet the temperature was about 97° F. Here the patient (nude) was exposed to the rays from one-half to one hour.

The immediate result of the bath was an increase of body temperature from 1 to 2½° in spite of profuse sweating, which occurred usually in five to fifteen minutes. The pulse-rate was increased and the tension softened. Though sweating was profuse, patients on lying down in a cooling-room invariably expressed themselves as feeling refreshed, though often tired when entering the bath. Other evidence of increased combustion than the rise of the temperature was an increase of urea. In all of the early cases treated by this method I had a blood-count made, and in all cases in which the count was less than normal, a second count was made after two weeks' treatment, which showed in the different cases from 25 to 40 per cent. increase in the red blood cells. The white blood cells were also increased, though not by so great a percentage.

In connection with the arc-light bath I used ozone, generated by fine electrical sparks from a high tension coil. This was arranged in a small cabinet in which the patient sat from five to fifteen minutes. I also used the high tension current directly on the body. These cases were mostly neurasthenia and anemia, though I also treated two cases of locomotor ataxia. My results with the ataxia were negative, but in the nervous and anemic cases quite satisfactory. The case which I especially wish to report is that of a young man who gave the following history:

Age, 22 years; occupation for several years past, attendant at a soda water fountain. He was sent to me in April, 1901, for treatment for gastric catarrh. He gave a history of mild neurasthenia for the previous several years. He also had several times trouble of the middle ear. He responded well to the treatment, and in a couple of months his stomach was in good condition and his nervous symptoms showed much improvement,

About the middle of September, he began to feel bad and have a little continuing fever. On September 16th he consulted Dr. Frank M. Reade, who made a diagnosis of pulmonary tuberculosis and attended him until my return to the city on September 25th last. His fever was continuous, running as high as 103° F. He had some night sweats, some cough and lost a good deal of flesh. Physical examination showed only a thickening of the pleura at the base of the left lung. On September 29th we had the sputum examined and then bacilli were found. There was, however, no history of tuberculosis in the family. He was put on increasing doses of cod-liver oil, and sent to the country where he stayed for a month.

On his return the sweats had ceased and he had gained 17 pounds; but the cough had increased, and, though morning temperature had disappeared, he was running an evening temperature of 100° to 101° F.

Physical examination, made November 18, on his return, showed the following: At the apex of the left lung and in the interscapular region, dulness, fremitus equal to the right lung, increased vocal resonance, whispered speech, broncho-vesicular breathing, prolonged expiratory sound, click at the end of forced expiration, or in other words, typical signs of consolidation of an area nearly the size of one's hand. The base of the left lung showed dulness to the level of the ninth rib in the scapular line extending to the front. Sounds on auscultation were diminished over this area. Deep breathing, commanded in the course of examination, invariably caused paroxysms of coughing which lasted several minutes.

These findings were verified by Dr. E. G. Williams and Dr. Frank M. Reade.

Treatment was then begun, consisting of arc-light baths of 30 to 40 minutes' duration; ozone inhalations which at first could be given only five or six minutes, as in that time it produced severe coughing, but which was increased until at the end of a month he could take it twenty minutes or longer without causing paroxysms. For the local stimulating effect I passed a current from the high tension coil directly through the diseased area for twenty minutes.

This treatment was daily; all medication was stopped, his occupation was changed and he became a collector, under orders to walk at least five miles a day in all kinds of weather. He was also directed to sleep with his windows wide open.

After two day's treatment his temperature became normal and remained so continually, At the end of a month physical examination was again made by Dr. Reade and myself. We thought there was some diminution in the dulness and fremitus over the affected area, but of this we could not be sure. The click on forced inspiration had disappeared, and coughing was not excited at all by this effort. His appetite was excellent.

Dr. H. H. Levy examined him for me this time and found dulness, prolonged expiratory note, subcrepitant rales, broncho-vesicular breathing at the apex and upper interscapular region and friction sounds at the base. I did not have a blood-count made at the beginning of his treatment, though from clinical evidence he was unmistakably very anemic. On December 23d a blood-count was made on coming to my office by Dr. E. G. Williams, showed 5,160,000 red corpuscles, 8,700 white corpuscles and hemoglobin 93 to 95 per cent. The count was again made immediately after he left the cabinet, when the red blood corpuscles numbered 6,310,000, while the white blood corpuscles showed 9,250. At this time he was leading an active life and expressed himself as feeling better than he had in several years.

Physical examinations were made again on January 13 and February 12th, at which the signs previously noted were found, though evidently less marked.

On February 15th this course of treatment was stopped and treatment by Finsen light inaugurated.

My apparatus, called an actinolyte, manufactured by a New York firm, consists essentially of an enormous arc light in which the carbons are set at right angles, so as to save loss, the light from which is concentrated by a series of large lenses, giving, when reduced to a small focus, a light approximated at seventy to eighty thousand candle power. The heat from this, which is so great that a cigarette can be lighted in the focus, is cut out by a water-bath, in which I have ussd methylene blue with best results.

The patient was stripped to the waist and placed about 8 feet from the machine, with his back to the light, and the light focused to a circle that would cover the consolidated area, including the apex and upper half of the scapula. The sittings were thirty minutes daily. Ozone and electricity were stopped. Later the patient was reversed, the light being directed on the front of the affected area.

That this light penetrated the lung I demonstrated by an experiment previously frequently made. A negative was placed over the pectoral muscles and in front of that a sensitive plate, all of which was then covered with material impervious to light. The light was then turned on over the scapula for twenty minutes, when the plate, on development, showed clearly a positive, which could only have been produced by rays passing through the negative after penetrating the body.

On March 19th physical examination showed a practically normal lung, with an occasional friction sound near the apex. In this finding Dr. Levy agreed.

On March 23d bacilli were still present, but the patient coughed only in the morning on arising, while taking deep breathing exercises.

Treatment was continued, with gradual lessening of the cough, until the last week in April, when he told me that he had ceased to cough entirely.

About April 25th the sputum was examined and no bacilli were found. This demonstrated clearly the greater efficiency of the concentrated light in deep-seated organs, as compared with the diffused light of the arc light bath.

[This patient died, unfortunately, of meningitis two months later before the cure of the pulmonary trouble could be positively proved].

A CASE OF SYPHILIS OF THE LUNG.

GRAHAM CHAMBERS reports the following in the *Dominion Med. Monthly* for September, 1902:

M. F., aged 28; family history is unimportant; patient came under my care about four years ago, at the time of her first labor, and she states that I am the only physician who has attended her since she was a child. An inquiry into her previous history before she became a patient of mine elicited nothing which would indicate a syphilitic history. Patient has two healthy children, aged two and four years. She has had no miscarriages.

History of present illness.—About three years ago patient consulted me on account of a sore throat. I found the soft palate deeply ulcerated and diagnosed the case one of tertiary syphilis. The exhibition of potassium iodide effected a speedy resolution and confirmed the diagnosis. Since that date her throat has given her no further trouble. The next time I attended her was at her second confinement, about two years ago. Last August she again came under my care. I found her expectorating blood and she told me that shortly before sending for me she coughed up about a quarter of a teacupful of it. She was anemic and somewhat emaciated and had a cough about two months previously. She also complained of a wheezing sensation in the upper part of left lung. The temperature was normal; examination of chest and heart, normal; right lung, normal; left lung, resonance on percussion, slightly diminished in intraclavicular region. Over upper lobe, front and back, bubbling rales and sonorous rhonchi, and harsh vesicular breathing. Vocal resonance normal. An examination of her sputum for tubercle bacilli gave a negative result. On account of her previous history she was given potassium iodide. Improvement was rapid and in a fortnight her cough had disappeared Later she was given mercury along with iodide. At the present time she is in splendid health and there is no indication of past disease of the lungs. I believe that this was a case of syphilis of the lungs and of the gummatous type. The gummata were probably situated around the medium side bronchus in the upper lobe of the left lung and the hemorrhage was no doubt due to a gumma undergoing necrosis and ulcerating into a bronchus.

Case No. 2.—A Case of Syphilis with Multiple Lesions, Periostitis, Arthriris and Ulcer of Rectum, etc.—S. H., aged 30; married; has never been pregnant. Ten years ago had rheumatism and was treated at Toronto General Hospital. Patient gives no history of primary or secondary syphilis. Four years ago she suffered from severe pains in her shins and head. Her shins were swollen and a lump appeared on her forehead. Although she did not take any medicine the pains and swellings disappeared in about three weeks. In 1899 she consulted me on account of a discharge from her bowels and constipation. An examination of the rectum revealed the presence of a restriction and an ulcer. She was given potassium iodide and appeared to be greatly benefited by the treatment. After a few weeks I lost sight of her until January of the present year, when she again consulted me. She was then complaining of severe pains in the head, shins and left elbow. Her elbow was swollen and hot and there were swellings on the forehead, left clavicle, left third rib near its union with its costal cartilage, and in front of the shins. The patient was given potassium iodide and mercury and in about a fortnight the pains and swellings disappeared. She continued to take the medicine for about three weeks longer. On May 15th the swelling of the left elbow reappeared and she was again given iodine and mercury. This swelling disappeared in a few days. At the present time she is still taking the medicine and appears in fairly good health.

The unusual feature about this case is the multiplicity of lesions.

A Case of Syphilis of the Finger.—A. M., aged 45, farmer. Came to St. Michael's Hospital in June, 1901, to have his right index finger amputated; his previous history was good. During the last ten years he had been farming, but previous to that date had lived in Toronto. Patient stated that he never had any form of venereal disease. The disease in the finger began about 18 months previously, in the form of a slight thickening around the root of the nail. At the time of the examination the end of the finger was thickened and club-shaped. The color was reddish-brown and very suggestive of a syphilitic lesion. The nail was soft, lustreless, and broken off nearly as far back as the matrix. The patient stated that the finger did not pain and gave him little trouble other than that from disfigurement. He was placed under special treatment and in about three weeks the finger had resumed its normal appearance. The interesting feature about this case is the occurrence of the disease in a farmer and as a result not being recognized by his family physician.

A Case of Syphilis with Early Cerebral Manifestations.—M. M., aged 22, single. Came under my care in St. Michael's Hospital January 1, 1901. His father had died at about forty years of age of some disease about which he could give no information; his mother was alive and healthy. His health had been good until a few months previous to his admission to the hospital. In June, 1889, he contracted chancre, which gradually healed after three or four weeks' treatment. About the end of the following September he began to have severe pain in the head and shortly afterwards found difficulty in opening the right eye. His mother states that his upper lid appeared to be paralyzed. During October and November he continued to have severe headaches, but regained power over the eyelids. In the following month (December) the symptoms became worse. The headaches were very severe. The patient appeared to have great difficulty in talking and his speech was frequently incoherent. When the headaches were severe the patient could not sleep. Mentally he became very sluggish and this condition gradually changed to a comatose state, accompanied by right hemiplegia, and this was his condition at the date of his admission to St. Michael's Hospital. The coma disappeared in a few days and then it was found that the hemiplegia was accompanied by complete motor aphasia. The aphasia was very slow to disappear. A month afterwards he was only able to say a few words. The medicinal treatment consisted in the administration of potassium iodide and later of iodide along with mercury. He continued under the treatment for a year. The condition of his right side was materially improved but he still had some difficulty in speaking. His was, no doubt, a case of cerebral syphilis, and the very unusual feature about the case is the appearance of the cerebral manifestations so early after the primary lesion. The pathological change in the brain was probably a meningitis accompanied by endarteritis.

A FAMILY SERIES OF FATAL AND DANGEROUS CASES OF ICTERUS NEONATORUM—FOURTEEN CASES IN ONE FAMILY WITH FOUR SURVIVORS.

J. A. Arkwright, M.D., writes as follows in the *Edinburgh Medical Journal*, for August, 1902:

History.—Mrs. J. E., about 44 years old, is a short, spare woman; she has had fair health, looks weak, and has a rather sallow, earthy complexion; hair, dull light brown; is active and industrious; had jaundice when four years old. Has had fifteen children, the last born on December 7, 1900; all but one certainly had jaundice as infants; there is some uncertainty about the one. The children were, roughly speaking, half males and half females.

First child.—Died, aged 7 months.

Second child.—A girl, aged 24. One hand is congenitally absent; the stump ends about middle of forearm, with one ill-formed finger; complexion good. As a baby, had jaundice, but not very badly; has had severe anemia.

Third child.—Died, jaundiced, as an infant.

Fourth child.—A boy, alive, aged 17. As a baby, had jaundice badly, and thrush very badly; Is now deaf, on account of large perforations in both membranæ tympani.

Fifth, sixth, seventh, eighth, ninth and tenth children. All died as infants with bad jaundice and convulsions; one, and only one, had bleeding from the navel, of which it died. None of these six lived to be more than a few months old, and some died at a few days.

Eleventh child.—A girl, the first observed by the writer, born July 19, 1894. Confinement natural, vertex presentation, a healthy-looking baby at birth; the same afternoon was a little jaundiced. July 20—More jaundiced, dark green meconium passed, and a little dark urine. July 21—Deep jaundice, convulsed; forearms extended, hands clenched; eyes move convulsively; varying internal strabismus; motions dark green, and later in the day, deep yellow; bowels open five or six times today. No vomiting. Took hyd. c. cret., 1-8 gr. July 22—Jaundice increased, more convulsions. Died at 7 a.m.

Twelfth child.—Born April, 1895. Natural delivery; healthy baby at birth, but soon after developed marked jaundice of about fourteen days' duration. May 1895—Taking bottle, and sleeping well; bowels open naturally; complexion muddy, and skin loose. August, 1896—Alive, but died subsequently.

Thirteenth child.—A boy, born August 30, 1896; natural delivery, a healthy-looking baby. September 1, decidedly jaundiced, but seems well; bowels open, motions very dark green; took hyd. c. cret., ¼ gr.; yawns a great deal. October, 1896; has wasted: skin is very loose and still very yellow, but less deep than a month ago; has vomited a good deal, but not now; bowels open; motions rather loose, yellow or green, with curds in them. October 24; does not grow much; dirty, sallow complexion; occasional diarrhea. Died at about 7 months old, wasting and diarrhea hav-continued.

Fourteenth child.—A boy, born September 15, 1897; natural appearance at birth; the next day had jaundice, which increased; motions, deep green; urine, dark colored. September 20; motions still green; convulsions in the night. 10 a.m. Calomel ¼ gr.; jaundice was deep, eyes twitching; slight convulsions occurred for some days, and the child took calomel (¼ gr.) on four occasions, with apparent benefit each time, being quieter and resting better after each powder. September 23, less jaundiced; motions less green; yawns a good deal. October 15, has been free from jaundice for about two weeks; looks fairly well, except for being anemic; takes milk well; ceased taking breast at about 14 days old. June 6, 1898; has one tooth; anterior fontanelle rather large; rickets; often has diarrhea; spleen not felt; liver about natural size. September 6, 1898; noticed to have "no use in the legs;" infantile paralysis of both lower limbs. December, 1900; can stand and walk round a table while holding on to it; the knees are very weak, and the knee-joints almost flail-like; general health improves.

Fifteenth child.—A boy, born December 7, 1900; a fine child at birth, looks well and healthy; mother seems remarkably well after confinement. December 8; deeply jaundiced; seems to be hungry; has some boiled cow's milk and water (1 to 2); is given powders of hyd. c. cret., ½ gr., to be taken twice daily. December 9, crying all night; motions, dark greenish brown, with small curds; ordered lime-water (2 parts), water (1 part); has become very deeply jaundiced. December 10, better. December 12, less jaundiced; sleeps; is taking hyd. c. cret. (¼ gr.) twice daily; is now taking only breast milk; bowels open; motions dark colored. December 13, bowels open once yesterday, motion dark, no curds. December 14, still takes hyd. c. cret. (¼ gr.) twice daily; no pain. December 18, has taken one powder today, the last; seems very well; slightly jaundiced; motions rather dark. December 21, convulsions occurred frequently, not severe, almost continuously for some hours; given potass. bromid., 1 gr., fourth hour, and hyd. c. cret., ¼ gr., *bis die*. Convulsions gradually ceased, and the child appeared quite well a week later. August 20, 1901, has recently had a bad attack of whooping cough: still coughs occasionally; is gaining strength, but is thin and weak; abdomen is rather large; liver edge is felt thin and natural, about 1 inch above the level of umbilicus in right nipple line; spleen not felt.

These cases of dangerous and fatal jaundice occurring in infants in one family are probably of the same nature as one described by Rolleston and others quoted there and described as cases of congenital obliteration of bile ducts.

The noticeable points about these cases, which are recorded at length above, are:

1. The jaundice was not congenital as in some of the cases recorded.

2. The jaundice appeared in the first few days, in several probably, and certainly in one, at least, of the children before the mother's milk had been taken.

3. The jaundice, when the child lived, lasted a few weeks to several months.

4. All the children (except perhaps one) of this family had jaundice as infants, but not all severely.

5. Mother had jaundice at 4 years old, and has a sallow complexion. All the children were rather weakly—one is deformed.

7. The motions, in the cases in which they were carefully observed, were never unduly pale, but unusually dark yellow or green.

8. Yawning, indigestion and convulsions were the chief additional symptoms.

9. Hemorrhage only occurred in one of the children, in the form of bleeding from the navel.

10. These cases support the view of the pathology taken by Dr. Rolleston, that the symptoms are due to a hepatitis and descending angiocholitis, which in these cases probably did not reach the common duct sufficiently to obstruct it, and perhaps only reached the pancreatic duct in one hemorrhagic case; *vide* Mayo Robson's view of the probably pancreatic origin of hemorrhagic tendency in cases of obstructive jaundice.

11. Treatment by mercury was apparently very beneficial.

12. These cases are, on the whole, milder than most series recorded, and therefore there was a better opportunity for observing the sequence of events.

13. Males and females were both affected; in some family series, only males were affected.

PEDIATRICS

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EDITORIAL COMMENTS

The Legal Standing of Christian Science in Philadelphia.

The recent decision relative to Christian Science rendered by Judge Arnold, Presiding Judge of the Court of Common Pleas of Philadelphia, must cause a glow of satisfaction to regular practitioners of medicine. It interests pediatrists especially, as children are peculiarly defenceless against these fanatics. We regret that lack of space prevents our doing more than culling a few pithy paragraphs to gladden the hearts of our readers.—The Philadelphia Christian Scientists were anxious to secure a charter and applied to the Courts. Judge Arnold has decided as follows: "The charter applied for in this case covers a double purpose—a church and a business. We have power to grant a charter for a church, but we have no authority to grant a charter to a corporation for profit, that is, a business corporation. That the application is for a charter for a corporation for profit is shown by the statement in the proposed charter that the purposes for which the applicants desire to be incorporated are—'To establish and maintain a place for the support of public worship and to preach the Gospel according to the doctrines of Christ Jesus, as found in the Bible, and the Christian Science text-book, Science and Health, with Key to the Scriptures, by Mary Baker G. Eddy.'

"The Gospel according to Mrs. Eddy is also shown in an article signed by her and published in the *Christian Science Journal* of March, 1897, in which she has written that 'The Bible' and 'Science and Health, with Key to the Scriptures,' and my other published works, are the only proper instructors for this hour. It shall be the duty of all Christian Scientists to circulate and to sell as many of these books as they can. If a member of the First Church of Christ, Scientist, shall fail to obey this injunction, it will render him liable to lose his membership in this church.'

"This shows that the so-called church is an association for profit, organized to enforce the sale of Mrs. Eddy's books by its members, which is a matter of business and not of religion. As the courts have no power to charter such an association, the application for a charter is refused."

In a supplemental opinion, he states that objection had been made to the former on the ground that he had gone outside of the record. In answer to this, he points out that in applications for charters, which are usually *ex parte*, it is the duty of the Court to obtain all the information possible before acting. To assist the Court in obtaining such evidence, Masters are appointed by the judge. He states, after having received the Master's report, that even if the court had power to charter this association, it should refuse to give its sanction to a body organized for the purpose for which this association has been established. He quotes from the report of the Master who has collected some choice passages from the maudlin vagaries of the high priestess' books, such as "What is termed disease does not exist"; "The so-called laws of health are simply laws of mortal belief." . . . "Truth makes no laws to regulate sickness, sin and death, for these are unknown to truth and should not be recognized by any man as reality." "When divine science overcomes faith in materia medica and faith in God destroys faith in drugs, all material methods of healing, sin, sickness and death will disappear"; "When disease is once destroyed in the mind fear of it is gone, and therefore it is thoroughly cured"; "Christian Science heals organic disease as well as functional. It finds that decided types of acute disease are quite as ready to yield to truth as the less distinct types and chronic forms of disease. It handles the most malignant contagion with perfect assurance."

The able judge adds the following comments: "These statements are palpable fallacies, and as long as they are inactive beliefs they may do no harm, but when they are put into practice they are pernicious and injurious to the community. When this practice is confined to the healers no harm results to others, but when they apply it to children or persons so racked with pain that in their desperation they resort to any theory or practice which promises relief, such practice results in neglect of proper treatment and often in death."

Again further on he says: "When persons who make a business of practicing the art of healing with or without medicine are not regular and registered physicians they violate the law which was intended to prevent the practice of medicine by non-qualified persons.

"It was for this reason that Judge Pennypacker, in the Court of Common Pleas No. 2, refused a charter to an association of persons like those before us, and we agree with him."

How to Take Castor Oil.

The disgust for castor oil is due to the odor, not to the taste. If the patient grips the nostrils firmly before pouring out the dose, drink same complacently, and then thoroughly cleanses the mouth, lips, larynx, etc., with water, removing the last vestige of the oil before removing the fingers, he will not get the least taste from the oil, which is bland and tasteless. It all depends upon keeping any air from entering the nose during the time while there is any oil present.—F. S. Hough, in *Iowa Medical Journal.—Carolina M. J.*

ORIGINAL ARTICLES

BUTTERMILK AS AN INFANT FOOD.*

By Adolph Baginsky, M.D.,
A.o. Professor of Children's Diseases at the University of Berlin;
Director of the Emperor and Empress Frederick Hospital
for Sick Children, Berlin.

FOR many years pediatrists of the entire world have been striving to obtain better conditions relative to the feeding of infants. By means of careful studies of the digestive tract, we tried to observe the various steps by which the nursling assimilated that most natural and best adapted infant food—woman's milk. From this point work was directed to cow's milk in order to obtain an accurate knowledge of its composition and the manner in which it is digested.

By means of the chemical and physical knowledge of the day, it was not difficult to find the gross differences between cow's and woman's milk, and, furthermore, to furnish proof that these differences were about as great as those existing between the stomachs of the calf and the infant. From this it was seen that cow's milk must be changed in order to make it more like woman's milk. All the difficulties which have stood in our way to accomplish this are known to you all. You know the authorities of the various countries who have dealt with this question. We know how exactly we must work in order to convert pure cow's milk into a fair substitute for mother's milk. Further studies concerning the quantities to be given at each feeding, the changes in the composition of the milk required according to the age and needs of the infant, are well known in the literature of infant feeding. Rotch's " modified milk " had specially in view the quantitative changes in the fat of cow's milk. Who has not used Biedert's cream mixtures, Gärtner's or Backhaus' milk? And yet who will deny that in spite of using these rationally-made mixtures, and in spite of

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*By courtesy of the *British Medical Journal.*

careful nursing, he has met with dire failure at the bedside? And so it was that we always looked for new methods of feeding, and every day new infant foods were placed before the medical man.

In 1895 there appeared a small brochure by deJager telling of the advantages of an infant food long used in Holland, namely, buttermilk. This did not gain the respect it deserved. Pediatrists were afraid to use what was looked upon as a waste product in milk economics, a product which was neither fresh nor had the least resemblance to the natural infant food. Furthermore, there was the withdrawal of that most nutritious portion of the milk—the fat. To feed children with this seemed the height of folly. It required the publications of Trixira de Matos* to awaken the interest of my countrymen. Soon after this a paper was read by Dr. Salge† at the Deutsche Naturforschung Versammlung in Hamburg, where also a discussion by Professor Schlossman was heard. Since that time there is scarcely a children's clinic in Germany which has not tried this method of feeding.

In the Emperor and Empress Frederick Hospital I had instituted a careful and far-reaching milk control, and I was loth to change this well-regulated and proven system. Yet I could not resist trying this food in such cases which failed to improve upon sterilized or modified milk, or upon any other known infant food. So I commenced very sparingly the use of buttermilk in July, 1901, and only used it freely when I saw the improvement in my cases and when I heard the extremely favorable reports given me personally by my young friend Schlossman. Since this time in this hospital, buttermilk has forced all other methods of feeding to the background. It was found that the children liked it, and that it was a food especially adapted for the dyspeptic infant. It could be used to advantage soon after an attack of summer diarrhea or acute dyspepsia.

The buttermilk used in our hospital is made from pure cream, which is soured by means of bacteria, which produce a lactic acid fermentation. The fat is thus extracted to a minimum (0.3 to 0.5 per cent.). This product is delivered as soon as it is finished.

**Jahrb. f. Kinderheilk*, Band lv, Heft 1.

†Ibid., Band lv, p. 157.

The buttermilk thus obtained is treated as follows: To one litre 15 to 25 grams of wheat flour and 35 to 50 grams of cane sugar are added. With constant stirring it is allowed to boil for at least two minutes (as a rule we allow the mixture to boil up three or four times). The milk is then poured into bottles which have been previously sterilized, stoppered by means of cotton, and kept in the ice-box until used. At the time of feeding they are placed in water at body temperature.

Thus prepared buttermilk is *a priori* far from resembling the ideal infant food, as is easily seen from the following analyses made in our own laboratory:

	Fat.	Albumin.	Sugar.	Starch.	Acidity.	Calories.
	Per cent.	Per cent.	Per cent.			
Woman's milk................	3.5	1.02	7	..	..	655
Prepared buttermilk.........	0.35	3.4	4.2to5.78*	0.26	60 to 80	597
Cow's milk.......	3.4	3.0	4.5	..	..	625

*Milk-cane.

Especially noticeable is the small amount of fat 0.35 per cent., as compared with 3.5 per cent. in woman's and cow's milk. Further we remark the high acidity which is present. The quantity of albumin is about the same as in cow's milk. According to our present ideas cencerning fat as a necessary constituent of an infant food, this low percentage would be a decided disadvantage. In fact this has already been pointed out by others who have used buttermilk, and has led to adding a little butter or cream when the child did not gain with the ordinary preparation. The high acidity is due in great part to the presence of lactic acid, which is known not to be injurious to infants. Small quantities of acetic or succitinic acids are also present. The albumin in buttermilk is also changed. It exceeds that in breast-milk by over 2 per cent., the casein is already coagulated and in extremely fine particles due to the flour present, so that we regard it as having the same characteristics that woman's milk has when it is in the infant's stomach (de Jager). It is better that the buttermilk be made from pure cream and not from skimmed milk, and that it be made with all due regard to cleanliness and dispatch, otherwise it may become a poisonous product as we have seen in some of our cases.

The next important question which arises is, how much to give the infant? We must remember that we have to deal with a food which is given undiluted and unchanged to all ages alike. The only thing that we can vary in its use is the quantity which we give. The best plan I believe is to do as with any other food, namely, give the known number of calories for the requirements of the child as derived from our studies upon breast-fed infants. This will also vary to a certain extent with each child. Trixira de Matos has given certain figures as to about the quantities to be given. For an 8 weeks old child he gives 633 grams pro die; 10 weeks old, 765 grams; 20 weeks old, 1,078; and 30 weeks old, 1,137 grams; 80 to 100 to 110 calories pro kilo. of the child's weight is about the average needed to maintain the physiological growth of the child. I cannot and do not wish to say anything concerning the feeding of healthy infants, for my observations are only in connection with sick children treated at the hospital. For these I kept to the known calories required for the weight of the child, but soon saw that we could better estimate the quantities to be given from the improvement which took place, and that it was best to give the child as nearly as possible what it should have for its age and not for its present weight. In other words, give it that number of calories which it would need were it of normal weight.

I will not take up any more of your time with theoretical considerations, but state in brief my observations made upon sick children in the Emperor and Empress Frederick Hospital. If we exclude those infants which were admitted to the surgical and infectious pavilions, and take only those which were in the medical wards, where they could be carefully observed and weighed two to three times weekly, my observations range over 182 cases, fed upon buttermilk. In 150 the results were excellent, in the remainder the improvement was less pronounced; in 33 children the feeding has been unsuccessful. In the entire hospital I had fed 300 children with buttermilk with similar results. A number of these cases were admitted with normal digestive organs, being treated for eczema, otitis media, bronchitis, etc., and a few were taken directly from the breast and given buttermilk, because the mothers could not visit the hospital to nourish their children. All took the buttermilk well, and gained weight. I would mention an 8 months old boy, who was taken from the breast and given buttermilk.

Weighed every three days; 8,300 grams on admission; then 8,550, and finally 8,750. From this it will be seen that buttermilk may be used as a substitute for mother's milk when necessity compels one to wean the child. Yet my experience in this class of cases, and in its prolonged use as a food, is so small that I do not care to express a positive opinion.

The great value of buttermilk shows itself in the acute cases of dyspepsia up to the severe grades of enteritis, with vomiting and diarrhea. Naturally one would not give it, nor any other food, at the height of an attack, when the temperature is high, vomiting severe and prostration great. The surprising thing is that this nourishment is well borne, even in the most severe cases, soon after giving the intestinal tract a rest.

I note 77 cases of dyspepsia and acute diarrhea in which buttermilk was taken with good results almost immediately after the attack. In 18 cases which did not do well I had to deal with other conditions, such as otitis media and bronchopneumonia, nor did these respond to other methods of feeding.

The same excellent results were observed in cases of chronic enteritis and in those which seemed almost atrophic or marasmic. That good results were obtained in all of these could hardly be expected, and it is among this class that I had most of my failures, 25 in all. They were admitted in extremely poor condition, and often almost moribund. For instance, E. M., very much emaciated, almost atrophic, with a chronic dyspepsia, aged 8 months, and only weighing 3,300 grams. Given buttermilk, and weighed every three days. Results as follows: 3,300, 3.440, 3,700, 3,840, that a gain of 540 grams in nine days. Here one would suspect starvation. This does not apply to the child, A. F., 8 months old, admitted with diagnosis of chronic enteritis, diarrhea and bronchitis, slight temperature; weight on admission 3,360 grams, treated as the above. Weights: 3,360 grams, 3,420, 3,600, 3,720, 3,950, a total increase of 590 grams in thirteen days. Another child, M. S., aged 3 months, weight 4,400 grams. diagnosis chronic enteritis. Buttermilk given. Weights; 4,400, 4,500, 4 540, 4,920, 5,150—a gain of 750 grams in fifteen days. A case of dermatitis furunculosa with chronic dyspepsia was fed upon Biedert's mixture, yet constantly lost weight (3,800 grams). With buttermilk. weights were as follows: 3,800, 4,570, 5,020, 5,400, an increase of 1,600 grams in thirty days.

Such results seen frequently and with great regularity give rise to the opinion that in buttermilk we have an excellent remedy for chronic dyspeptic cases, and that it should be tried as a remedy and diateticum.

When we ask in what do its healing properties consist? we can scarcely answer, although we study the question in all its phases. The nourishment is taken and well borne by children of all ages. I have had them from birth to the end of the second year. Mostly our children had it between the ages of 2 and 7 months. Yet the youngest took it as well as the oldest, excepting in those which are entirely refractory towards milk, as is at times the case.

The improvement in the infants by the use of buttermilk is shown, first, in the stools, which become pasty and lose their odor; secondly, by the gain in weight of the children; and, thirdly, in their general appearance, for they become good-natured, smiling and friendly. To this appearance of the stools we must know that the starch in the nourishment is no longer found in the feces except in the very young children whose digestive powers are probably not qualified to assimilate it. Therefore I give dextrinized flour (Kinder mehl) to the very young infants.

As far as the rapid gain in weight is concerned it seems hardly possible that it is due to a direct increase in the body tissues, and it is more likely due to a large absorption of water. This is an excellent thing, for we have often to deal with cases where the loss of body fluids is so great that the children go to death only by water loss. Yet there must also be an actual increase in tissue weight, for the results of prolonged feeding, both in the cases under my observation and in Holland are very good. I have a few cases under observation where I have given buttermilk for a long time and with good results. But my cases are too few to bear any light upon this point. Dr. Schwarz, of New York, at present as pupil in the wards of the Emperor and Empress Frederick Hospital, is working upon a phase of this question, and may be able to answer some of the questions in course of time.

From this rather brief communication and from my own experiences I may draw the following conclusions:

1. Buttermilk as prepared and recommended by the Dutch physicians is a good food for acutely and chronically sick infants.

2. Prepared buttermilk is well borne soon after attacks of acute dyspepsia and summer diarrhea.

3. In chronic diarrhea and chronic enteritis cases it may be looked upon as a life-saving preparation.

4. It is to be hoped that more observations be made upon its use as an actual food for healthy infants.

5. In the cases which I have observed for a long time, I have never seen disturbances of nutrition, such as rachitis or scorbutus develop.

Ametropia in Kindergarten Children.

The eye of the little child is almost always hyperopic and astigmatic, and the ocular tissues are especially plastic and easily injured by near work, such as common in kindergarten schools. It therefore behooves all teachers of these schools and parents who send their children to them to see to it that the eyes of every child should be scientifically tested by an expert oculist.

Dr. Newsholme, of England, has especially directed attention to the danger of injury to the eye at this time of life, but with many others he fails to point out the true remedy. It is not so much the postponement of attendance at school until later years, when the eye shall have supposedly become more capable of resisting strain; this should be done, of course, if there were no other remedy. But there is another remedy, viz., spectacles, if needed; and with this remedy applied there is obviated all the disaster rightly described. The work of the ordinary kindergarten is not harmful to the eyes or health of a little child, providing that the eyes have been tested by a skilled refractionist. If the child of five needs glasses to prevent injury to the eyes and to the health, the chances are that at a later age the double injury will not be avoided except by the use of glasses. All the nonsense about "bespectacled children" and a "beglassed nation" must be contemptuously put down. If the facts are as stated, pride and prejudice must have no voice in the matter.—*Am. Med.*

FIXATION, THE ESSENTIAL OF TREATMENT FOR TUBERCULAR JOINT DISEASE.

By Edward A. Tracy, M.D.,
Boston, Mass.

AT the fifty-first meeting of the American Medical Association in the Section of Children's Diseases, the writer presented a paper advocating the employment of fixation in the treatment of tubercular joint disease in children. In that paper, in the part devoted to tubercular hip disease, it was stated that "traction is only necessary to reduce the deformity present in acute cases and due to spasmodic contraction of the muscles." The stand then taken by the writer, thus limiting the employment of traction in hip-joint disease, was indeed in marked contrast to the teachings of other American orthopedists. Indeed, at the present time, the value of traction in the treatment of tubercular joints is vastly overestimated.

Witness Young, of Philadelphia, in a recent article on the "Diagnosis and Treatment of Tubercular Arthritis"* writes: "The mechanical treatment of joint disease may be summed up in one word—traction—which is the result of experimentation and clinical experience of many years' standing. Traction may be applied by means of apparatus or by extension appliances of different forms, but whatever the means it should be thorough and should be continued for a very long time. By traction methods recovery from joint disease of tubercular character will sometimes be effected, while by other methods the results will be less satisfactory and will frequently lead to the destruction of the joint." It should be noted that it is stated that with traction recovery from joint disease of a tubercular character will *sometimes* be effected. The writer will agree that sometimes, despite traction, recovery ensues; but he protests against the condemnation of other methods unless they be specified. The writer does not regard the treatment of joint tuberculosis by fixation as condemned by Young unless he cite cases where it failed. Fixation to be effective must be a genuine fixation, not a pseudo-fixation. Fixation by means of plaster of paris, as ordinarily offered, is a fallacy as the writer has repeatedly shown. A limb swathed in cotton batting cannot be immobilized by any surrounding substance, no matter how rigid the substance may be. Again, swelling and its subsidence are not provided for in a limb encased in plaster. For true fixation the limb must be bandaged to a rigid material lying directly upon the skin. The writer knows of nothing superior to wood-plastic splint material for joint fixation. It can be moulded upon the limb, directly next the skin, and is rigid, light, clean, durable, easily removed and reapplied.

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* *The Therapeutic Gazette*, June 15, 1902. Philadelphia.

In contradistinction to Young's statement (advising long-continued traction) that recovery will *sometimes* be effected, the writer states that with fixation (effective fixation as with wood-plastic material) a cure will almost always be effected. Another statement in Dr. Young's article the writer desires to correct. It is the following: "While lesions (tubercular) may occur in several different joints they are never active at the same time. One will be active while the other is quiescent."

The writer has under his care at the present time a boy of 11 years, with an active tuberculosis of the right knee-joint, and an active tuberculosis of the left wrist-joint, the latter being of more recent origin; nor is this to be wondered at. It is a pretty well demonstrated fact that tuberculosis of the joints is caused by slight trauma causing arrest of tubercular bacilli floating in the blood current. In this manner a focus of disease is started from which it spreads by the irritation caused by motion in the joint as well as by the mechanical effect of motion itself. If some bacilli continue to remain in the blood current and another slight trauma occurs in some other joint causing arrest of these bacilli, we have another focus of the disease—another diseased joint. This occurs in nature, as the cases cited by the writer illustrate. It is not of frequent occurrence, perhaps because when a child has an active tuberculosis of any joint there is sensitiveness to any unusual jarring, and this trauma is automatically avoided. It may appear that the writer is hypercritical with Dr. Young's paper, but the statements of a teacher in any branch of medical science should bear the brunt of facts, else they are mere theoretical notions of little value to the practitioner. At least one orthopedic teacher has given traction as the universal treatment for tubercular disease of the joint. As a matter of fact, however, the only joint that permits of such treatment, practically, is the hip-joint. The authors of a prominent text-book in orthopedics write: "In certain joints, as the elbow, sacroiliac, symphysis pubis, traction is impractical." The present writer will add that it is impractical in the treatment of the ankle-joint, the metatarsal joints, the wrist, the joints of the dorsal and lumbar vertebræ. It is almost impractical with the extended knee. There is only left for the employment of traction as common seats of tubercular disease the hip-joint and the cervical vertebræ. Tubercular disease of the ankle, the metatarsal joints, the knee, the vertebræ, the elbow, the wrist and the sacroiliac joint, are universally conservatively treated by fixation, and though the writer believes, for most part, the fixation as generally employed is an imperfect one, nevertheless the results of treatment are at least favorable when compared with the cases of hip-joint disease treated solely by traction. These latter, as stated by Young, *sometimes* get well, but oftener, the writer believes, they come under the knife.

Another writer on this subject (Lovett) is markedly modifying his views on the place of traction in the treatment of tubercular hip disease. In an article published August 24, 1901, in the *N. Y. Medical Journal*, he describes a hip splint, the main feature of which is the fixation it provides, and states that in many cases fixation is employed "because we are driven to it"—driven to it because of its curative effect. Further on Lovett states that "traction therefore would seem to be a desirable and reasonable element of treatment in acute hip disease, but with it should be combined enough fixation at least to limit the arc of motion well inside that set by nature, as shown by the amount of muscular spasm present in the joint—if not to afford all possible fixation to the joint." This quotation, indeed almost apologetic for traction, shows that Lovett is coming to give fixation the place the present writer has claimed for it for several years. The splint described in Lovett's paper is the present writer's splint form, described in a paper published in the *Journal of the A. M. A.* with unnecessary traction straps added.

The present writer uses wood-plastic material, from which is made a clean, light, porous splint. Lovett uses leather covered with hot bayberry wax and in the above paper describes his splint as being "hot and dirty." The present writer thinks it strange that a Bostonian should use and prescribe a splint that is "hot and dirty." Is it right to inflict such on our patients when we have at hand wood-plastic material endorsed by such men as Manly, of New York, Gay and Marcy, of Boston, J. B. Murphy, of Chicago, and the late Ernest Hart, of England?

Another point in Lovett's paper that the writer feels it incumbent upon him to criticize is the statement that "hip-joint disease is synonymous with a composite group of cases of varying pathological origins of which tuberculosis is only one." The present writer contends that hip-joint disease is used and has been for years as synonymous with tuberculosis of the hip-joint only. If Lovett means that after so many years of observation and study the practical orthopedist is unable to make a diagnosis of tuberculosis of the hip-joint and to differentiate it from other pathological conditions, the present writer disagrees with him.

The diagnosis of tuberculosis of the hip-joint is generally an easy problem. The writer has treated of it in a former paper* to which the reader is referred. There is one point he desires to impress at present relative to making a diagnosis in the case of children. It is treated of in the following extract from the paper referred to above: "When examining a child its confidence must be won, so that the little one becomes passive during the examination. Otherwise it will be impossible sometimes to distinguish between the voluntary and involuntary muscular action of the child." Irritation may thus be referred to a joint in which there is really none. The writer has recently operated upon a case of pes equinus that had been treated by an orthopedist of note for hip disease for a year. An observation of the above rule would have prevented this error. The present writer grants that occasionally an orthopedist may trip up on a diagnosis, for the clacicist claims that even Homer nods, but that it should be in general considered difficult to make a definite diagnosis of tubercular hip-joint disease the writer will not grant for a moment. Moreover this diagnosis is in the province of the general practitioner, and, furthermore, so is the treatment of incipient tuberculosis of the hip-joint. Its treatment by fixation is a simple matter. During the past nine years the writer has tested this method of treating tuberculosis of the joints, and from personal observations of the results of this treatment he feels that it cannot be too strongly advocated by the orthopedic specialist. Nor is the treatment new, for the eminent English surgeon, John Hilton, taught its use forty years ago, and demonstrated then its efficiency.

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* "Tubercular Disease of the Knee-joint and Hip-joint in Children; Diagnosis and Treatment. *Journal A. M. A.*, May 5, 1901.

The writer deeply regrets that this famous surgeon's views of the treatment of joint tuberculosis have not had an earlier recognition in Boston, for from an experience in persona propria with the treatment of knee-joint tuberculosis as practised in Boston 25 to 30 years ago, ending with amputation at upper third of the thigh, the writer feels that he has cause for this regret.

The method of treatment by fixation is very simple, as before remarked. Any practitioner can master it and thus add to his power for good in the community in which he practises. It is unfortunate that this easy and efficient method first taught by the master-mind of Hilton should have been slighted and obscured by the complicated apparatus-methods devised by some orthopedic specialists. As the writer has remarked in a former paper these complicated contrivances are such as to make it requsite that their inventor apply them. The complicated construction of these splints would be no reasonable objection to their use if their efficiency was in proportion to their want of simplicity. But inasmuch as a cure is the best possible result obtained by the use of the most ingeniously elaborate combination of bars, sectors, springs, straps and sticking plaster,—it follows, if this result accrue by aid of a simple device readily made and applied by the general practitioner, that this device should be more generally advocated and taught in the schools—at least one might suppose so. In the treatment of the representative cases of tubercular joint disease described below the apparatus used was of the simplest construction possible. The result of treatment in every case was was a perfect cure, that is, there was complete restoration of form and function, so that at the present time it would be impossible to make a diagnosis of the past condition.

Case 1.—Tubercular Disease of the Metatarsal Joints about the Cuboid Bone.

B. F., aged 4½ years, examined and treated at the Boston City Hospital, and at the Boston Dispensary for a year previous to treatment by the writer. The foot was swollen, the joints specified were very tender, the writer's treatment consisted in applying a splint moulded upon the foot, ankle and lower leg. The splint was made from wood-plastic material. It consisted of several layers of wood-plastic material, between which some LePage's liquid glue had been applied, causing them to adhere so as to form a very rigid splint. This was worn directly next the skin, being bandaged snugly to the parts. A raised shoe and crutches took the diseased foot off the ground. It was difficult to have hygienic measures properly carried out in this case, but absolute cure of the condition resulted after a year's treatment by fixation.

Case 2.—Tubercular Disease of both Knee-joints.

W. D., a delicate boy of 6 years. For a year or more he had been treated at the Boston Children's Hospital; his father upon finding the second knee becoming diseased became alarmed and brought the child for treatment to the writer. He was wearing a modified Thomas splint on his left limb. Tubercular joint disease was present in an advanced stage, manifested by tenderness, swelling and adhesions in the joint; the joint had very little motion. Tuberculosis was present in the right knee, it being flexed, and incapable of motion because of pain. It was swollen and tender also. Treatment—Both joints were immediately immobilized by means of wood-plastic splint material, the right joint being immobilized in the fixed position, in which the writer found it. The writer ordered a four-wheeled cart to be made so that the child could be kept in the open air as much as possible. The child could propel the cart by turning the rear wheels with his hands, he being in a sitting position in the cart. Gradually the immobilization of the right knee quieted down the disease in the right joint so that at intervals of a month the knee was immobilized with a newly moulded wood-plastic splint in a position nearer to the extended position than the previous one. About the fourth month the knee was fully extended. At the end of eight months his right knee recovered, so that with a raised shoe on his right foot he could get along with crutches. The adhesions in his left knee were broken up under ether and after a year's immobilization with passive motion at intervals of about three weeks, he recovered its use. The complete time of his treatment by the writer was 16 months. The boy is now living in Everett, Mass., and has had no trouble of any kind for the past two years. At the present time the fact of his having suffered from tuberculosis of the knee-joint could not be diagnosed from his present condition, but the fact is on record at the Boston Children's Hospital.

Case 3.—Tubercular Hip-joint Disease.

H. M., aged 11 years; boy gave history of a fall some weeks before. The right hip was flexed and abducted; there was extreme tenderness of the joint, spasm of the hip muscles, reflex in nature; night cries present. Traction was applied by means of cord, pulley and weight, the pulley being attached to the raised lower end of the bedstead. The limb was straightened in about two weeks. As the writer has before remarked this is the only case of tubercular joint disease in which traction should be employed, viz., to reduce deformity due to reflex muscular action. Upon the straightening of the limb a splint was moulded so as to enclose the right side of the chest, the hip and thigh to the knee-joint. This splint, made from wood-plastic material, immobilized the diseased joint and pain and night discomfort immediately ceased. The joint was kept immobilized in this manner for sixteen months, the boy was up and about, using crutches and a raised shoe, from the second month of treatment. Gradual improvement in the arcs of motion was noted and decrease of joint tenderness during the sixteen months of immobilization. A protective splint constructed from gas-pipe, of the essential design of Judson's perineal crutch, was worn for about six months. He has had no trouble since his cure six years ago; no deformity, no limitation of motion. His recovery is perfect. In this case traction was employed for the brief period of two weeks, and simply reduced the muscular-action-deformity gradually instead of abruptly, as it can be done. The essential curative agent was immobilization, produced by the writer's wood-plastic splint. The protective splint, Judson's perineal crutch, transferring the body weight from the tuberosity of the ilium to the ground by means of an iron rod was used after the cure of the diseased joint, to prevent trauma and a consequent recurrence. Fixation therefore was the essential curative agent in this case.

These cases are presented as typical cases of a few of the tubercular joint diseases, acute and chronic, found in children, and cured absolutely by means of joint fixation produced by the use of wood-plastic splinting. They, and many other cases of tubercular joint disease in children and adults treated in like manner by fixation, have demonstrated to the writer the efficiency of this method. The method is as simple as it is efficient. It merits the attention of every practitioner, because it places within his reach the treatment of tubercular joint diseases, that in their incipiency are very amenable to correct treatment.

As an orthopedic specialist the writer believes that the general practitioner should treat the tubercular joint diseases of which illustrative cases are cited above, because the method of treatment described is simple, efficient and curative,—more curative in fact than the irrational and complicated traction methods so much affected by some orthopedic teachers.

Visual Hygiene in the Public Schools.

The time has surely come when it should be demanded of the State that adequate and scientific hygiene must be provided if school attendance is made compulsory. Those who have in general terms advocated this have often shrunk from definite and detailed description of what this means for fear of the charge of self-seeking and self-advertising, We must conquer such squeamishness, because as we progress (or regress?) there there is more danger from the great machine which with its "grind" and "cramming" too often endangers the health and vision of the children. In every State the law should command that thoroughgoing testing of the eyes of every pupil should be assured by a competent refractionist, either supplied by the parents or furnished by the school authorities. The majority of young eyes are hyperopic and astigmatic, and lifelong harm may follow their use at an early age without spectacles. There is an error all too prevalent already that eyestrain means overuse of a normal (or approximately normal) eye, whereas the term means the results of the use of an ametropic eye. A vast deal of the ill-health and bad results charged generally to schooling and overcrowding, such as anorexia, nervousness, denutrition, headache, etc., are solely due to ametropia, which itself is not a disease (except in high myopia) but which with the use of the eyes speedily begets disease.—*American Medicine.*

SOCIETY REPORTS

THE MEDICAL ASSOCIATION OF THE GREATER CITY OF NEW YORK.

Stated Meeting held at the New York Academy of Medicine, October 13, 1902.

The President, Andrew H. Smith, M.D., in the Chair.

Infection with the Bacillus of Dysentery with Especial Reference to its Role in the Summer Diarrheas of Children. Dr. Simon Flexner, Professor of Pathology in the University of Pennsylvania, delivered an address on this subject. In it he said his aim would be to consider the character of the diseases which are now associated with the occurrence of the bacillus dysenteriæ, with a view to explaining the wide divergence in symptoms and lesions. The tendency in modern medicine is to characterize a disease by its etiology, to differentiate a disease or a group of clinical phenomena by its underlying cause rather than by the pathological conditions met with. Perhaps the best example of this is to be found in the case of diphtheria. Grouped under this name we now have many pathological conditions which were not formerly regarded as belonging to diphtheria; yet all have been found to be associated with the Klebs-Loeffler bacillus. This differentiation has contributed much to a proper appreciation of the subject of this disease, and so it seems likely to be the case as regards that group of symptoms constituting dysentery.

As to the justification for this mode of classification here, it may be stated that the study of the causation of dysentery has tended more and more to the conclusion that there is a specific microörganism which constitutes the etiological factor in the great majority of intestinal infections which go by the name of dysentery. Such a distinctive *bacillus dysenteriæ* was demonstrated in 1898 by Shiga, of Japan. Some of the grounds in which the etiological relation to the disease is based are the following: The bacillus is never found in the intestine in a state of health. It is found to be present in various types of dysenteric disease. Animals may be inoculated with the disease by cultures from it. Agglutinative reactions are obtained with it which cannot be secured from any other organism met with in the intestinal canal. Dysentery is a disease which is endemic in Japan. Frightful epidemics occur there every year, in which thousands of persons are attacked and in which the mortality is often as high as 50 per cent. The organism was first isolated in cases under treatment in the hospital at Tokio.

Since 1898 it has been carefully looked for in cases of dysentery by many observers. It has been found in the Philippines and other parts of the East, and also in this country, in institutional outbreaks, in isolated cases and in terminal dysentery (where the disease occurs at the close of Bright's disease, hepatic diseases, etc.). In Germany it was found in 1899, especially among the troops returning from China. It has also been recognized in England and Holland, and, in fact, wherever it has been purposely looked for. We have been accustomed to think of special types of the disease as, for instance, amebic dysentery. The form which is characterized by the presence of amebæ is well known as a chronic, not an acute disease. It never occurs in the form of an epidemic, though it is much more frequently met with in tropical than in temperate climates. The lesions are located in the large intestine. No false membranes are found, but there is much thickening of the gut. The *bacillus dysenteriæ* has not been recognized in connection with it. Many observers have been skeptical as to amebic dysentery's constituting a distinct type, regarding the presence of the ameba as simply an epiphenomenon. The subject has not as yet been cleared up, and, as a matter of fact, one or two cases of acute amebic dysentery have recently been reported from the Phillipines.

Now what is the type of dysentery associated with the Shiga bacillus, not as determined by symptomatology, but by the lesions in the intestines? This is an active disease, and thus we find that the great epidemics of dysentery are due to the bacillus. Pseudo-membranous colitis may be regarded as typical of it; yet the greatest variations are met with, and false membranes are not infrequently absent Sometimes there is ulceration and sometimes not. In the reports of the dysentery met with during the Civil War, or of the disease as it has occurred in institutional outbreaks here and abroad, may be studied the varieties of the disease in which the bacillus is now found. Again the tendency of such dysenteries to become chronic is well known. In the chronic form, in place of free exudation, we have deep ulcerations, thickenings, new tissue formation, as the typical lesions. We can therefore recognize as caused by the bacillus two types of dysentery (without reference to the mode of occurrence), the acute and the chronic. In the chronic there are proliferative changes in the intestinal mucosa, and exacerbations occur which are due to new developments of the organism.

During the past season, under the auspices of the Rockefeller Institute of Medical Research, the opportunity was afforded to make a study of the conditions met with in the summer diarrheas of children. The work was carried on at the

Thomas Wilson Sanitarium near Baltimore, by C. W. Duval, of Annapolis, and V. H. Bassett, of Baltimore, who are students in the University of Pennsylvania and the Johns Hopkins University. Mr. Duval was peculiarly qualified for the investigation, as he had already made a special study of dysentery as it occurred in outbreaks at New Haven and other places. They were not so possessed with the idea that the Shiga bacillus was the distinctive bacillus of the disease present that they were not constantly on the lookout for others, but all the other organisms found resisted the tests applied to them. In fact, at the beginning of the study, they endeavored to obtain from the dejecta as many organisms as possible. All of these they tested with the blood serum of the sick children, and in no other instance than in the case of the Shiga bacillus was the agglutinative reaction observed.

The cases were characterized by an acute onset, elevation of temperature and the presence at some stage of the disease of mucus and blood in the stools. Of 51 or 52 cases of this character in almost none was there a failure to recognize the bacillus. The organism was almost invariably found in all the cases in which the disturbances were severe. There were other cases of a lighter grade, which might be designated as dyspeptic diarrhea, where the bacillus was not found. Some of these milder cases, however, afterwards become of a severe type, and then the organism was discovered to be present. The conclusions arrived at were that this bacillus is not met with in healthy children, and that its etiological relation to the intestinal disease was shown by its presence, its constancy, and the peculiar blood reaction obtainable from it. This organism, it may be said, has important relations with the colon bacillus and the great typhoid group in general. Yet while it belongs to this group, it has its own distinct individuality, and the differentiation is perfectly simple to those familiar with its characteristics. It resembles the typhoid bacillus perhaps more closely than any other, and yet in the disease in question the characteristic agglutinative reaction could never be obtained with the latter.

As to the practical results of the discoveries in connection with the Shiga bacillus, they seem likely to prove of great value, first, as regards the prevention of the infection, and, secondly, as regards its successful treatment. As to the matter of prevention, the first consideration is to discover where the organism is found in nature, as it has been shown to be absent from the normal intestinal flora. While at present nothing positive is known on this point, there is indirect evidence to the fact that it has to do with water contamination. Like the germs of typhoid fever and cholera, it would appear to gain access to water. Like these organisms also it is easily destroyed, being killed by a temperature considerably below the boiling point. Where else it may occur we have no knowledge.

Proceeding on the general basis of vaccination, it is entirely feasible to protect small animals, like guineapigs, against it. The horse, it is found, is more susceptible to such immunization than either the guineapig or mare, but for experimental purposes the guineapig is the most suitable. As it is almost impossible to get people always to drink boiled water in the tropics, it would perhaps seem justifiable that troops stationed in some parts of the Phillipines, for instance, should be inoculated with the attenuated serum as a protection against dysentery. Such inoculation is attended with no danger whatever, but whether it would really be effective or not could only be determined after extended observation.

In the case of children, inoculation would not be justifiable. For them what we would hope for is the production of a serum which would prove successful as a means of treatment. In doubtful cases the blood can be tested for the agglutinative reaction, which can always be obtained within the first ten days, if at all. In active cases, however, it would be best not to wait for the blood reaction, but to immediately examine the dejecta for the bacillus, which may be looked after the first 24 or 36 hours. If an effective serum can be produced it would seem justifiable to use it in suspected cases at the earliest possible moment. It is at present certain that with antidysenteric immune serum it is perfectly easy to protect guineapigs against a dose of infection which, without such protection, would inevitably prove fatal. It is to be hoped that this subject will be taken up by many investigators, and that practical results of great value will be eventually obtained.

DISCUSSION.

The discussion was opened by Dr. FRANCIS DELAFIELD, who said he could well understand how difficult Dr. Flexner must have felt it to be to cover the whole subject of inflammation of the colon. There were a great many different conditions, and what was good for one was not good for another. As regards the character and treatment of such disease he feared that we had not as yet got beyond local experience If you live in New York, he went on to say, you know what people here are likely to have. Whether you call the disease dysentery or colitis, there are certain things you see, and certain things you do not see. Pretty regularly we have an acute inflammation of the colon, attended with congestion and a free discharge of mucus, which may occur in adults or in children. The trouble may be principally confined to the rectum, or involve the whole length of the colon. In the former case the disease runs its course inside of a week, and the patient gets well. If the whole colon is involved adults generally recover, while children are apt to die. Then, especially in hot weather, we have an acute inflammation (met with in adults even oftener than in children) in which there is a very large transudation of serum.

It is not fatal in adults, but is likely to prove so in children. The etiology does not appear to be settled. Again there is a rarer form of inflammation in which there is seen an infiltration of the connective-tissue coat of the colon with pus, such as sometimes occurs in the stomach and is known as purulent or phlegmonous gastritis. This, so far as we know, is always fatal, whether it attacks adults or children. It behaves like the other streptococcus infections. Still again there is a colon inflammation with sclerosis, and several different kinds have been observed. Thus the glandular coat may be involved, or the connective-tissue coat, or the whole intestinal wall. In New York the only variety met with is that in which the glandular coat is affected. The acute cases last about three weeks and may prove fatal. The chronic cases last for months and may also eventually prove fatal. There is another form of necrotic colitis, the croupous, and this would appear to come under the category described by the speaker. It is a variety of dysentery met with both in temperate and in tropical climates. Its severity depends partly on the part which is affected and partly on the intensity of the infection.

He was somewhat surprised to hear Dr. Flexner speak of amebic dysentery as essentially a chronic disease. It seemed to him that the acute cases were not so very rare. He had seen them not only coming from Cuba but also occurring in New York. These were classified as severe acute amebic dysentery and mild acute amebic dysentery. Then there are the subacute and the chronic cases. On the whole, he thought there was a good deal of amebic dysentery. In all his remarks Dr. Delafield said he had been speaking from simply a local standpoint.

Dr. L. Emmett Holt said that as the result of these researches described by Dr. Flexner we had the first ray of light upon the uncertain etiology of our summer diarrheas. In the past many things were suspected, but very little had been proved. The blood reaction now obtained established something more than mere conjecture. The fact that it was observed in 50 cases in a single place showed that the infection is not rare. Long ago he had been struck with the similarity of the lesions in many cases in childhood to those met with in dysentery. There was a croupous and follicular inflammation. These were not the only cases, but they contributed the largest number of fatal cases. The isolation of the bacillus of dysentery was a great step forward. Heretofore there had been great confusion in our bacteriological investigations, but now this organism was distinctly differentiated from the colon bacillus. It seemed to him that we were on the eve of great progress. A large part of the work thus far accomplished had been done by Dr. Flexner or under his direction, and the profession was greatly indebted to him for his indefatigable labors in the cause of scientific medicine.

Dr. Edward K. Dunham said there was but little difficulty in identifying the bacillus. While in Maine during the past summer he had the opportunity of doing this in four cases, two of which were in adults and two in children. In three of them the agglutinative reaction was obtained, while in the fourth the cultures were made from the dejecta.

Dr. Henry Dwight Chapin said that in listening to Dr. Flexner's remarks it had occurred to him that if the bacillus was conveyed in water it might also be carried in milk. He was also struck by Dr. Delafield's remarks on local experience. That the types of summer diarrhea and the mortality from the disease varied very greatly in different localities and at different times was shown by a study of its statistics in New York City and State during the past ten years. In some years the death-rate was high in the city and small in the country, and in the other seasons vice versa. Thus in 1901 the mortality in the city was very great. This could not very well be attributed to the milk, as it was shipped to New York, since the same milk was used in the country. During that summer the city's streets were very much torn up, and it seemed probable that some local infection was imparted to the milk after its arrival here. A series of very interesting experiments had been made by Drs. Babcock and Russell in regard to putrefaction in clots of milk. The conditions were altogether favorable for the contamination of milk with impurities, and he could not but believe that this was responslble for a good deal of the trouble. In children we did not ordinarily meet with dysentery, but had an ileo-colitis.

Dr. James Ewing said that in regard to amebic dysentery his experience coincided with that of Dr. Delafield. The acute variety of the disease did occur here, and cases of it had been found among the troops in camp at Montauk Point during the Spanish-American war. The main point was the demonstration of the same bacillus in dysentery and in the summer diarrhea of children. The question naturally arose whether all types of summer diarrhea were due to this organism. In some cases recently reported to the New York Pathological Society the disease was apparently not caused by the Shiga bacillus, since no blood reaction could be obtained. As to an antidysenteric immune serum, it would certainly be a triumph if one could be secured which would antagonize grave lesions in the intestines. Up to the present time antityphoid serum had proved practically useless, notwithstanding the fact that in the laboratory animals had been protected by it from infection. He therefore thought it doubtful whether a serum could be prepared which would be of sufficient power to control the formidable disease in question. It seemed to him that Dr. Delafield had taken the correct view in regard to the etiology of dysentery. Some varieties were due to streptococcus infection, and others were due to different causes. Further study was required before we could arrive at definite conclusions in regard to the scope of the Shiga bacillus.

Dr. HENRY KOPLIK said it was a fact of far-reaching importance that in a certain set of cases occurring in the summer in infants and young children the bacillus which had previously been isolated in the dysentery of adults had been found to contribute the distinctive etiological factor. Yet a few years ago the Pediatric Society had thought seriously of excluding dysentery from among the diseases of childhood. There could be no question that the term summer diarrhea includes many types, and he believed that the standpoint of Dr. Delafield was the correct one. Those with any extended experience, he said, met with all varieties of cases, varying from the very mild to the severe choleraic. Still, Dr. Flexner had pointed out that certain cases were due to a particular bacillus, and as Dr. Holt had stated, this was certainly a step in advance.

Dr. HENRY ILLOWAY inquired why the cases in which the bacillus of dysentery was found should not be frankly called dysentery. The so-called summer diarrheas, he said, were made up of a large number of groups. He himself was accustomed to designate as summer diarrhea only that variety which was caused by heat. The heat was the sole factor in its production, and if the child were removed to a cool climate the disease at once disappeared. Where such removal was impracticable, a cure could usually be effected by creating artificially the conditions which were antagonistic to heat diarrhea. Hence in these cases we resorted to such measures as the cold pack, etc., together with such treatment as seemed to be required for the correction of dyspeptic symptoms. In this class of cases the bacillus described could not be the cause, for the reason that the disease developed so rapidly and disappeared so rapidly when the child was removed to a cold place. The other diarrheas were those which are met with in winter as well as in summer. He thought it would simplify the matter therefore if Dr. Flexner would say that we have cases of dysentery among infants and young children.

Dr. C. A. HERTER spoke on the therapeutical aspect of the subject. During the past summer, he said, serum prepared by Dr. Flexner had been used in the case of a child 5 years old whom he saw in association with Dr. Theodore Dunham. The serum was employed for the following reasons: (1) The patient was desperately ill; (2) Dr. Flexner had demonstrated the fact that in animals his serum protects against the bacillus; (3) the bacillus of dysentery had been shown to be present in children suffering from summer diarrhea; (4) the experience of Shiga in the treatment of dysentery was borne in mind. Out of 500 cases at the hospital in Tokio 280 were treated with serum, the others being treated in the ordinary manner. Shiga reported that the mortality among those receiving the serum treatment was very much less than in the case of the others. It has only 9 or 10 per cent., while in the others it amounted to from 30 to 50 per cent., 39 per cent. being the average. He also reported that under the serum treatment there was a prompt amelioration of the symptoms and the course of the disease was very much shortened. In view of these facts the serum treatment was resorted to in the case in question.. The child had been ill for nearly a week, repeated vomiting had taken place, and enemata could not be retained. There was great prostration and several periods of collapse had occurred in which it was feared that the patient would die. For three days no food had been retained. About the seventh or eighth day of the disease there was marked distention of the abdomen. The movements, which were very numerous, consisted of mucus stained with blood. Within the last 36 hours the patient had clearly lost ground.

Injections of 10 or 12 cm. of the serum three or four times a day or oftener were then commenced. An immediate improvement was observed after the first injection. The number of the movements was diminished and the tenesmus relieved, the temperature and pulse were lowered and the patient became distinctly more comfortable. Restlessness, which had been extreme, was relieved to a remarkable degree. The injections had such a good effect that on the third day it was decided advisable to discontinue them. In the course of some hours, however, there was a recurrence of the symptoms and they were resumed. As soon as one large dose was given there was again a striking improvement; but after three or four injections it was decided to diminish the dose, as it seemed doubtful whether the serum was now doing any good. The movements did not increase in number, nor did the blood reappear in the passages, but there was considerable abdominal distress, and the temperature rose to 105° F. It seemed probable that secondary infections were present at this time. On the whole, Dr. Herter thought that this was a line of investigation which offered great promise. He said he could not assent to the opinion that the fact that we had not succeeded with typhoid serum afforded any reason why we should not succeed here. Of course much study and research, as well as extended observation, were still needed before this application of serum therapy could be placed on a thoroughly satisfactory basis.

Dr. Flexner, in closing the discussion, said that the question was an open one. He did not think that any one person was likely to designate the exact scope of the disease. He believed that the bacillus of dysentery was associated with a wide divergence in symptoms and lesions, and it was gratifying to know that there were now many centers of investigation through the instrumentality of which the demarkation of the disease would no doubt be accomplished, as had been the case in diphtheria. He said he would like to give a word of caution. He did not believe that those interested in investigating the subject would succeed easily in collecting the organisms from ordinary stools. The stools must be quite fresh, for even if the bacilli were present in large numbers they would disappear within a short time. They had no chance with the colon bacillus and it was therefore necessary that the material should be plated at once. It was also advisable to select material which was not admixed with fecal matter. This was an organism of the mucosa, which in the intestinal material went very well by itself, but very badly if it had to contend against the colon bacillus and other microörganisms. He thoroughly agreed with Dr. Delafield in most of his statements, and he was much pleased to learn that he had had experience with acute amebic dysentery. As he had mentioned in his previous remarks, cases had recently been met with in the Phillipines. As to the disease as it occurred in children he could not speak as a clinician. He had used the term summer diarrhea simply because it was the one in general use. Now, as it seemed, there was afforded an opportunity to differentiate the disease. In conclusion, he said we looked not for a definite pathological anatomy, but for a definite bacillus. The etiology would enable us to determine whether there was really one or more diseases. False membranes were by no means always present but it might be said that when they are met with in adults the bacillus would invariably be found.

Typhoid Fever at Bayside, L. I.

The occurrence of thirty-one cases of typhoid fever in the last two weeks has caused an investigation by the New York Board of Health. It was found that the dairymen at Bayside had been washing the milk-cans and bottles in the stationary wash-tubs in which his family washing was done. His daughter was one of the first affected with typhoid fever.—*Phila. Med. Jonr.*

PRACTICAL NOTES

Electric Light Conjunctivitis.

Grimsdale (*Il Policlinico*, June 14, 1902) notes that this disease has received scant acknowledgement in literature. He reports several cases with varying symptoms. The disease is more alarming than serious and lasts only a few days. Cold compresses give the greatest relief. One of the cases reported shows that it is the ultraviolet rays and not the general illumination which produce the effect. Probably dark yellow glasses would act as a preventive to both this and snow blindness even better than the ordinary smoke tint. The conjunctivitis can hardly be from direct injury, otherwise we should not get the interval of quiescence after the immediate results have passed off before the acute symptoms come on. It must be due to a disturbance of the nervous system, especially the vascular centers, by direct stimulation of the afferent nerves, or the rays cause some chemic change in the conjunctiva whose products act as strong irritants, producing local inflammation. The former seems more probable.—*Am. Med.*

Notification of Malaria.

The Board of Health has prepared a circular to be sent to practitioners in this city requesting them to report to the Board all cases of malarial fever under their care. "It is the earnest desire of the Department of Health," this circular reads, "to acquire all possible information as to the occurrence and distribution of malaria in New York City, with a view to its eventual stamping out, and physicians are therefore requested to notify the department of all cases of malarial fever coming under their observation. Information is desired regarding the location of the fever, so that, as far as possible, proper measures may be taken to correct the unsanitary conditions which produce it." To facilitate the desired notification of malaria, special postal cards have been prepared, and a supply of these cards will be sent to any physician on request. In return for such coöperation on the part of physicians, the Department of Health will make free microscopical examinations of the blood for malarial parasites, whenever requested to do so by the physician in attendance on a suspected case.—*Med. Rec.*

Wise Advice from Chicago.

The prevalence of typhoid fever in Chicago has evidently keyed the Health Department of that enterprising city up to a high pitch of vigilance. Its weekly bulletin for August 9th states that the disease is more prevalent in Chicago than it has been at any time since the three years immediately preceding the World's Fair, during which period it carried off 4,495 victims and gave the city such a bad preëminence among the nations of the earth as to threaten the success of that great enterprise.

There is no mincing of words in that statement, for, as the health department announces, this is not a time for squeamishness in the use of language. The Health Department has started out with the deliberate intention of shocking the public of Chicago into some realization of the nature and sole cause of the disease. It announces that typhoid fever is a filth disease and is not catching. One cannot catch typhoid fever any more than one can catch a broken leg. The germs must be eaten or drunk, and it is very evident that a great many germs are being eaten and drunk at the present time in Chicago.—*Phila. Med. Jour.*

To Administer Castor Oil.

A "Medical Philosopher" gave the following "tip" in the *Midland Medical Miscellany* for May, 1882. Ancient as it is, it is very well known, and as the writer has seen it successfully employed, it may be worth resuscitating. "Mix a slice or two of well-browned toast or pie-crust with some strong meat extract or gravy; add pepper, salt and herbs, and heat the whole so as to produce an aromatic and flavorsome dish. Then mingle the oleum ricini therewith and administer the combination at an opportune moment. Do not reveal its medicinal character; but merely describe it as a 'meal' that the doctor has ordered. By the adoption of this plan a patient may be induced greedily to devour castor oil, and to declare through the mouthfuls that castor oil is one of those disgusting things that he never could and never will take.—*Cleveland Med. Jour.*

Wholesale Milk Poisoning.

T. M. Baird (*Va. Med. Semi-Monthly*) attended one night twelve patients presenting symptoms similar to those of cholera morbus. The night previous these people had eaten of sardines, as well as of milk, therefore the milk supply was not suspected. The second day following he was called to see 21 guests and 16 negro employees of the Sweet Springs Hotel, who had used milk from the same dairy. The next day 8 more were attacked after drinking buttermilk for dinner. A careful inspection was made of the dairy, and the animals all seemed healthy and the dairy itself was kept scrupulously clean. A companion, however, drank some milk and was taken ill six hours later, while the manager of the farm who also partook of it freely, was not affected. The writer speaks of the sickness as being due to ptomain poisoning but is nevertheless inclined to lay the blame upon the metal vessels used in the dairy. There was no further trouble after the use of earthenware vessels was commenced.—*Med. Standard.*

Peruvian Physicians.

To practice medicine in Peru a physician must pass a State Medical Board examination in Spanish. A certificate is then given him entitling him to practice in any part of Peru. As both Lima and Callao contain a large number of Americans and English either city would seem to offer a good opening for all young men with a knowledge of Spanish.—*Phila. Med. Jour.*

The Army Medical Department.

Brigadier-General Robert M. O'Reilly, whose succession was announced editorially in *American Medicine*, August 2, entered upon his duties as Surgeon-General of the Army Medical Department, September 8. He was recently in charge of the medical corps of the Department of California and he has just completed a tour of inspection of the principal military posts between San Francisco and Washington.—*Am. Med.*

ABSTRACTS

DRUGS IN THE SUMMER DIARRHEA OF CHILDREN.

Maurice Ostheimer (*Charlotte Med. Jour.*, Sept. 1902) writes: While well understood in the larger cities at present, the treatment of summer diarrhea in infants and young children, as practiced throughout the United States can as yet hardly be called ideal. For medical men especially those graduated over ten years ago, never having learned the efficiency of good general hygiene, still rely mainly upon drugs. The value of the so-called starvation treatment of children who, during the hot weather, develop what is termed summer diarrhea, is unknown to many older practitioners.

Yet the experience of the past few years, as is shown by the dispensary services of the hospitals of our larger cities, points to this as the main feature in the treatment of summer diarrhea. This temporary starvation, as it seems to the mother, is accomplished by stopping all milk and other food as soon as symptoms of summer diarrhea appear. As a balm to the feelings of the mother, who fears that such treatment will weaken her child, barley water is as a rule given. Plain boiled water or albumen water, however, acts almost as well, since it is only desired to give the stomach a complete rest. Nor should frequent bathing or sponging, and plenty of fresh air and water to drink be forgotten. Then in two or three days, when diarrhea and fever have disappeared, milk is to be given again, in gradually increasing amounts.

The great mistake made by older physicians is to write a prescription containing many astringents, or an odd mixture of laxatives and astringents. Such medication not only will not check the diarrhea, but soon also causes the development of more pronounced gastric symptoms. It is far better to give one dose of castor oil, from 1 to 4 drams, depending on the age of the child, or divided doses of calomel, where there is also vomiting. In the great majority of cases these are the only drugs needed. It should, however, be added that astringents do become necessary when diarrhea persists over five days after the administration of the castor oil or calomel. Then large doses of bismuth are indicated, from 10 to 20 grains every three hours; should there be pain, tenesmus, or marked nervous symptoms, 1-4 minim doses of the deodorized tincture of opium are to be given besides.

When the bowel movements are scanty but loose, and contain blood and much mucus, nothing is better than enteroclysis, with warm or cold normal salt solution, depending upon the child's temperature. This should not, however, be overdone, one or two such enemata, on successive or alternate days, proving sufficient. Salol in 1-2 grain doses may be added to the calomel or bismuth should there be a tendency to fever. Whiskey or brandy is not indicated, except in those cases in which, from the duration of the diarrhea, decided weakness has resulted. Even then panopeptone, liquid peptonoids, or some similar preparation is better. From 15 to 30 drops may be added to the barley water, or given separately in water, every three hours. For strengthening the child during convalescence, a few drops of tincture of nux vomica is best.

TRACHOMA AND ITS TREATMENT.

WM. COWEN (*Am. Therapist*, July, 1902) writes as follows: Of all the forms of lid disease trachoma is perhaps the most interesting, because of the prevalence of the trouble and the dangers to the eye-ball. The great bulk of lid diseases is made up statistically of catarrhal inflammations and of granular lids, and among the poorly-housed working classes trachoma is wide-spread.

The worst torms of trachoma is brought to this country by the hordes of immigrants from Russia and Italy. The herding together of these people in crowded tenements offers an unsurmountable obstacle to the stamping out of the infection. The nature and treatment of trachoma becomes thus a grave question from the social point of view.

The laudable attempt of the Board of Health in trying to eradicate trachoma from the public schools by daily inspections, has demonstrated to what a large extent school children are the victims,and how the disease may run its course without causing any marked symptoms.

While the curability of trachoma is universally admitted, it must also be admitted that the mucous membrane of a lid once the seat of a trachomatous infection is always susceptible to catarrhal changes.

Here, as in other diseases, prevention of the disease is the object in view.

The varieties of trachoma can be generally classified as acute or follicular, and as a diffusedly infiltrated form in which no follicles can be seen; there is also a variety of trachoma in which the tendency to atrophy of the mucous membrane is so great that it becomes converted into a thin cicatricial tissue devoid of glands; it is in this form of trachoma that we find deformities of the tarsal cartilage, resulting in the eyelashes sweeping over the corneal surface producing corneal abrasions, ulcerations and pannus.

This clinical picture is found in advanced stages of trachoma and must represent a natural termination of the disease. We find it especially among the immigrant class who have had no opportunities for eye treatment in their native places. These patients do not really suffer from trachoma, but from its corneal complications.

The diagnosis of trachoma presents no difficulty; its treatment presents a great deal. In the acute or follicular form the surgical methods have great sway at present, the method consisting in the mechanical crushing of the follicles which carry the contagion; in the diffusedly infiltrated form of trachoma where the mucous membrane has become converted into a thick velvety membrane the scarification method has been used. The disadvantages of both methods consist in the damage done to the mucous membrane of the lids, and while an immediate improvement is noticeable, I believe the final cicatrizations leave the lid in worse shape than if no surgical treatment had been employed.

The non-surgical treatment consists in the application of the copper stick, bichloride of mercury solutions, alum stick, and solutions of iodine in benzol.

The copper stick has always been a very effective method of treatment, but it is so very painful that patients dread it, and as many of the patients are children, a less painful method of treatment must be employed. During the last year I have treated a large number of trachoma cases of all varieties and in all stages, with the glycerite of tannin in its officinal strength, and it appears to me that it accomplishes more than any other drug.

In the first place, the applications are not painful; five or ten minutes after an application patients use their eyes without any difficulty.

The relative painlessness of the treatment is important, because the young subjects will simply refuse to submit to a painful treatment, often to be repeated, as it must be in granular lids.

In the diffusedly infiltrated form and in the dry cicatricial variety the glycerite of tannin is equally serviceable; in this dry variety of the disease the treatment is particularly grateful, because the dry membrane is covered with the oily solution produced by the glycerine. The method of applying the solution is to soak a cotton swab with it and rub it in very briskly into the membrane.

Applications should be made as frequently as possible, once a day if feasible.

As with the other methods, so here the treatment must last a considerable time.

The presence of corneal complications of trachoma in abrasions, ulcerations and pannus of the cornea are no contraindication to the employment of the glycerite of tannin. The use of this preparation for the purpose indicated above is as yet not widely enough known, and I can recommend its employment.

THE LEUCOCYTE COUNT IN THE SUMMER DIARRHEAS OF CHILDREN.

J. H. Mason Knox, Jr. and L. M. Warfield (*Johns Hopkins Hospital Bulletin*, July, 1902) come to the following conclusions:

1. A differential count of leucocytes in the blood of well children under two years of age, as compared with the blood of adults, shows that there is a relative increase in the small mononuclear elements and a decrease in the number of polymorphonuclear cells.

2. In the summer diarrheas of infants the number of leucocytes in the blood is usually increased but the count of the white cells varies within such wide limits, even in the milder forms of the affection, that a high or low leucocytosis cannot be regarded as of diagnostic value.

3. In the simple dyspepsias of childhood a differential count of the leucocytes does not show any marked variation from that of a healthy

infant, but as the cases become more severe in type there is apparently a progressive increase in the polymorphonuclear neutrophile cells and a decrease in those of the small mononuclear variety, thus presenting a picture more like that of adult blood.

4. As pointed out by Japha, the polymorphonuclear leucocytosis is an indication of an intoxication with decomposition products in the intestine or of the toxins of pathological bacteria, i.e., it takes place both in the cases of the acute intestinal poisoning and in the more severe forms of ileocolitis.

5. The cases of simple infantile atrophy present a nearly normal differential leucocyte count, but it would seem that an increase of the polymorphonuclear cells may indicate the setting in of an inflammatory intestinal complication.

INFANTILE SUMMER DIARRHEA IS DYSENTERY.

During the past summer Messrs. C. W. Duval and V. H. Bassett, fourth-year medical students—the former at the University of Pennsylvania and the latter at the Johns Hopkins University—engaged in an investigation of the causation of the summer diarrheas of infants at the Thomas Wilson Sanitarium, near Baltimore.

The work was undertaken with the aid of an appropriation, granted for the purpose of this investigation, by the Rockefeller Institute of Medcal Research. Mr. Duval had already, in collaboration with Mr. Vedder and under the supervision of Professor Flexner, engaged in a study of the acute dysentery of adults in the country, and thereby had become familiar with the characters and the methods of isolation of the bacillus which causes this disease, *Bacillus dysenteriae* Shiga. This previous work enabled him to discover, in the first two cases of summer diarrhea of infants which he examined, the Shiga bacillus. In the further investigations Mr. Bassett was associated with him in the research.

They have found the Shiga bacillus in the stools in over 40 cases of infantile summer diarrhea. It was present in large numbers in the acute cases but was obtained with difficulty from mild and chronic cases. They had no opportunity of examining the type of the disease, known in the restricted sense as cholera infantum, which constitutes, according to Dr. Holt, only 2 or 3 per cent. of the cases of the summer diarrhea of infants.

The Shiga bacillus was not found in the stools of healthy infants or of those affected with other diseases, of whom many were examined as controls.

An important aid, in the diagnosis both of the disease and of the specific bacillus, is the agglutinating power of the blood of infants affected with the disease as regards the bacillus, as well as the agglutination produced by specific immune sera. The investigators believe that the evidence is sufficient to justify their conclusion that this bacillus is the cause of at least most cases of summer diarrhea of infants, but of course it is desirable that similar observations should be made elsewhere and on a larger scale.

Doubtless the reasons why previous investigators have failed to detect the Shiga bacillus in this disease are partly the unusual difficulty in discovering specific germs in the extensive and varied intestinal flora, and partly that special familiarity with the modes of isolation and recognition of the Shiga bacillus is necessary for its detection.—*Medical Record*, September 13, 1902.

GELATIN TREATMENT OF MELÆNA NEONATORUM.

E. FUHRMANN (*Ber. klin. Woch.*, Sept. 1, 1902) has treated three cases of this disease by the subcutaneous injections of gelatin. One case died and two recovered. All three cases were without doubt melæna vera. The case that died was, at the outset, of moderate severity. The gelatin was promptly used, but had apparently no effect upon the hemorrhages. Of the two cases which recovered one was of moderate severity. The other was mild and would have undoubtedly spontaneously recovered without the use of the gelatin.

In estimating the value of gelatin in the treatment of this disease it must be remembered that many cases recover spontaneously under any or even no treatment; nevertheless the value of this treatment is not to be underestimated. Many reports have been made within the past few months concerning its great utility, and the second case here reported without doubt proves its efficacy. In using gelatin in the treatment of hemorrhage the 2 per cent. solution should always be made by the means of physiological salt solution, as local complications are very seldom observed when such is used.—*Med. Rec.*

THE DIFFERENTIAL LEUCOCYTE COUNT IN THE NEW-BORN.

L. M. WARFIELD (*N. Y. Med. Jour.*, September 20, 1902) concludes that:

1. The leucocytes at the day of birth are more numerous than at any other time of normal life.

2. Nucleated red blood corpuscles rapidly disappear from the circulating blood of the healthy infant within the first three days of life.

3. The percentage of eosinophiles varies widely in the blood of babies of the same age.

4. Myelocytes and mast-cells are only occasionally found, and are in very small numbers.

5. The percentage of large mononuclear and transitional cells is large compared to that found in the blood of adults.

6. The polymorphonuclear cells at birth are not only relatively but absolutely increased. They begin to decrease in numbers soon after birth and by the eleventh day of a healthy infant's life they are fewer in number than the lymphocytes, while the number of the latter variety of cell has actually increased; and the differential count of the leucocytes on the eleventh day is practically identical with the count given in the text-books as normal for the infant's blood.—*Med. Rec.*

REPORT OF A CASE OF NON-TRAUMATIC ACUTE SUPPURATIVE OSTEOMYELITIS WITH CATARRHAL COXITIS; WITH REMARKS.

R. I. RAYMOND (*Med. News*, Sept. 20, 1902) in discussing this subject enumerates the following symptoms: A sudden invasion; a child takes to bed from the first day; fever and chilly sensations and a complete abolition of functions of the affected limb, with terrific spontaneous pains in the hip or knee. Pressure over the trochanter, or striking the soles of the feet, and any attempt at passive movement of the limbs, increase the pains. (In tuberculous coxitis the onset is not sudden). Swelling about the hips, the gluteal and anterior femoral regions of a boggy edematous character sets in. There may be multiple joint affections, as in rheumatism. In some one joint the inflammation becomes localized, while the other affected joints clear up. The catarrhal cases may clear up in from four to six months or possibly a year; the suppurative cases may continue for three or four years should the patient not succumb to pyemia, septicemia, or some intercurrent affection or amyloid degeneration of organs. Spontaneous luxation of the joint may ensue, with ankylosis and distortions, namely, flexion, adduction, abduction, rotation, or a combination of these.—*Medical Record.*

TEMPORARY MODIFIED INTUBATION OF THE LARYNX, AS AN AID AND SAFEGUARD IN OPERATIONS IN THE MOUTH AND PHARYNX.

R. S. ROYCE (*Brooklyn Med. Jour.*, October, 1902). Recognizing that many times in operations upon the palate and in the mouth or pharynx, the operator is put to much delay, inconvenience and even great anxiety by reason of inspiration by the patient of blood and refuse from the field of operation; and that then anesthetizing is difficult, attended by extra danger and the anesthetic pushed beyond the stage of greatest safety to allow the operator time to make progress in his work before the next interruption to renew the anesthetic, it occurred to the writer that possibly all of these annoyances and difficulties might be removed, and the element of danger to the patient eliminated by a simple operative procedure before commencing the operation proper, and as soon as the patient is under the anesthetic.

To this end the usual laryngeal intubation tube was modified by the addition of a thin, tightly-fitting tube that is passed into the top of it, wedging enough to be withdrawn with difficulty, and having its upper end extending above the top of the intubation tube about 3-8 inch, over this a moderarely stiff rubber tube is forced; then the tube is grasped in a pair of suitable forceps, just above the head of the intubation tube, and with a gag in the mouth of the patient the intubation tube is passed into the larynx and the free end of the flexible tube is left protruding from the mouth to be introduced into a cornucopia lightly filled with cotton on which the anesthetic is dropped, This allows the operator to continue his work uninterrupted by the anesthetist; meantime whatever blood may fall in the pharynx may be wiped away or washed out by irrigation without any disturbance of the respiration, as the tube with its flexible extension blocks all entrance to the respiratory tract except through the free end under the control of the anesthetist.

AN ANALYSIS OF FIFTY-FIVE CASES OF DIPHTHERIA.

H. G. Godfrey (*Am. Med.*, Oct. 4, 1902) writes as follows: Prodromal symptoms were seen in 20 cases for a period of 24 hours or less preceding the development of definite lesions in the throat. Malaise, headache, pain on deglutition and sore throat were usually complained of. Injection of the pharynx and roughnening of the mucosa were seen at this time. The onset was usually marked by increase of restlessness (by slight delirium in two cases) but not infrequently by dense apathy. An intense blanching of the face was highly characteristic. A fine erythema of the chest and abdomen was seen in four cases. Vomiting occurred at this time in 10 cases; in 3 it was frequently repeated (4 to 6 times.)

The temperature, which had been elevated 1 or 2° during the prodromal period, took a sharp rise at the formation of the membrane, the acme being attained in 12 to 24 hours. In 5 cases it was between 100. and 101°; in 6, 101-102°; in 10, 102-103°; in 22, 103-104; in 12, 104-105°, There was no relation between the temperature and the severity of the infection.

The pulse was accelerated out of proportion to the temperature in the prodromal stage and increased coincident with the membrane formation. The pulse frequency was as follows: 90, 1; 101-110, 6; 110-120, 15; 120-130, 26; 130-140, 5; 140-145, 2.

The membrane appeared first on one or both tonsils in 35 cases; as an exudate within the follicles of the tonsil in 8; in discrete patches on the wall of the pharynx in 6; deeply hidden in a sulcus of the tonsil in 4; and upon the nasal mucosa in 2. Its extension was very rapid during the first 12 hours, after which intense edema of the subjacent structures developed, the bulging of the anterior portion of the tonsil and the uvula often being sufficient to obscure the patches visible several hours before. A formation of membrane on the pharynx in discrete, linear patches behind the posterior half-arch, moist, greenish or brownish in appearance, was characteristic.

Lymphadenitis was seen in 20 cases. It occurred early, was usually unilateral. In 2 cases there was brawny swelling of the upper half of the neck, with palpable enlargements of the glands of the subclavian triangle. A putrid odor from the throat was common in those cases in which lymphadenitis was marked.

Vomiting was seen in 22 cases, in 10 at the onset. It was persistent and frequent in 3 cases in which the nasopharynx was the site of infection.

Concentrated diphtheria antitoxic serum was used in all cases in initial doses of 2,000 units or more: The injection was made in the subcutaneous tissues of the thigh. An immediate rise of temperature of 1° and increase of pulse-rate of 6 to 12 followed. The vomiting was relieved, the pallor and facies changed, the pulse became fuller and in four hours the patient expressed a sense of relief. In 12 to 20 hours the edema was less, and evidences of limitation of the membrane were seen in its thickened, curled edges and in the zone of injection in the surrounding mucosa. The temperature fell steadily and the membrane was discharged in pieces or in mass in 48 hours. In less favorable cases double the quantity of the initial dosage was injected after 12 hours or less. The average total dosage was 4,500 units. In 14 it was between 5,000-10,000; in 4, 10,000-15,000; in 1, 20,000.

In one case the infection was overpowered by the use of 15,000 units of diphtheria antitoxic serum in 26 hours and in the second by 20,000 units in 22 hours. The specific remedy should be used in quantity sufficient to control the disease in 24 hours. The initial dose may be high if necessary (6,000 in one instance); and if grave symptoms persist or increase, double the quantity of the initial dosage should be injected in 12 hours or less. A secondary rise of temperature, which indicates usually some extension of the infection or a reformation of the membrane, call for further resort to antitoxin.

Degenerations of the heart-muscle occur early in this disease. Irregularities or intermissions of the pulse were noted in 18 cases, in 10 on the second day. Antitoxin is not depressant to the heart.

The persistence in the throat of the diphtheria bacilli is especially noteworthy—in one of the cases for 37 days. The average period was 13 days.

The complications in this series of cases were as follows: Nasal hemorrhage, 2 cases; albuminuria, 7 cases, in 2 associated with epithelial and granular casts. There were no palsies.

The untoward effects of the antitoxin were as follows: Arthropathies of knee and hip in 2 cases; urticarious rashes in 8. In one the rash was preceded by vomiting and diarrhea, and the urine showed increase of albumin and casts. A hectic type of fever developed in convalescence in one in whom pulmonary tuberculosis had previously been suspected. All of these toxic manifestations made their appearance between the eighth and eleventh days and were of short duration.

A series of blood-counts were made in 10 cases, the conclusions from which were as follows:

> Leucocytosis is variable from 12,000 to 32,000.
>
> Leucocytosis is progressively diminished by successive doses of antitoxic serum.
>
> Reduction of the erythrocytes is moderate, the count during the entire course being between 4,000,000 and 3,000,000.
>
> Hemoglobin is reduced disproportionately, the fall being abrupt on the third or fourth day, and continuing into the convalescence. The greatest decrease was 34 per cent.; the average, 20 per cent.

It was expected, in view of the toxic manifestations in those cases in which the antitoxin dosage had been high, that a greater anemia would appear in them. However, in that case in which 20,000 units were used the final anemia was less than in two others in which but 2.000 were employed, and in which the infection was comparatively mild. The first counts in these were approximately mild. This suggests that the larger doses conserve the blood to a greater degree.

EPIDEMIC POLIOMYELITIS, WITH A REPORT OF TEN CASES.

D. H. MacKenzie (*Medical Record*, Oct.4,1904). says: I ask attention in this paper to the consideration of an acute form of disease, seemingly infectious and of bacterial origin, presenting in its initial stages the clinical features of an acute germ invasion, quickly followed by atrophic paralysis of associated muscle groups, in one or more extremities. Instances of its seeming epidemic, or rather endemic occurrence have been reported, the most noted examples in North America being an irruption of poliomyelitis reported by J. J. Putnam, which occurred in and near Boston in 1894, and the outbreak in Vermont during the same year, reported by Dr. Dana, of New York. The last mentioned is said to be the most remarkable instance of epidemic poliomyelitis on record. The cases, some 160 in number. appeared from June to September in the towns and country lying in the valley of Otto Creek. Most of the cases occurred in children, although several adults were attacked, and one man, aged seventy, had a typical case. Domestic animals, such as fowls, horses and dogs, also suffered from the malady.

An epidemic occurred in Dutchess County, N. Y., during the summer and autumn of 1899. There were in this instance some 30 cases, confined to an area of country ten miles in diameter, lying to the east of the city of Poughkeepsie. In this epidemic adults were attacked as well as children, and all of the fatal cases were those of adults, or at least those over twelve years of age. Ten cases came under my care.

These cases occurred in the town of Washington. There were also five other cases in the town. Three proved fatal, and in each case the paralysis began in the lower extremities, and extended upward until the muscles of respiration became affected. The other two recovered, one with muscular weakness in the right side, but was entirely recovered in six months, the other with flaccid paralysis of the left leg, which at the present time is atrophied and partly paralyzed. There were also two cases in the town of Amenia, with one death. This makes 17 cases in the towns of Washington and Amenia, with 7 deaths, or a mortality of over 41 per cent.

Of these 17 cases only 2 presented the classical symptoms of poliomyelitis. One case in Amenia was undoubtedly cerebrospinal meningitis, having the convulsions, coma and other symptoms peculiar to that disease and was diagnosed as such by the attending physician. Now the question arises, What was the disease in the other 14 cases? Dr. Bondurant, of Mobile, Ala., who has written several articles on this and kindred subjects, in his comment on the Vermont outbreak of 1894 says: "The clinical histories of the majority of the cases were typical of poliomyelitis, but some of them presented the features of peripheral neuritis, while many of the fatal cases exhibited the convulsions, coma and other symptoms of cerebral meningitis. We have then presented to us the interesting fact that during the same epidemic, and presumably from the same cause, there occurred cases of poliomyelitis, neuritis and cerebrospinal meningitis, a circumstance lending color to the contention of Auerbach, that these several forms of nervous disease may result from the same microbic infection. It is also noteworthy that during this epidemic mild cases of poliomyelitis terminated in complete recovery, although a study of the reported cases of recovery convinces me that some of them were instances of multiple neuritis rather than of poliomyelitis."

Two of the fatal cases which I have mentioned were diagnosed as Landry's paralysis, and this diagnosis was afterward sanctioned by some of the local physicians.

PEDIATRICS

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ORIGINAL ARTICLES

CONGENITAL NYSTAGMUS IN FATHER AND CHILD.*

By THEODORE FISHER, M.D., M.R.C.P.,

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Pathologist to the Bristol Royal Infirmary.

THE following case I have thought of sufficient interest to be worthy of a brief record:

A healthy looking female infant, aged 5 months, was brought to the Bristol Hospital for Sick Children on January 15, 1902, for constipation. A lateral nystagmus was noticed to be present which affected both eyes equally. The eyes were continually being moved to one or the other corne of the palpebral apertures, where an oscillation was present which was generally rapid, and the range of movement small; but sometimes the nystagmus was of a slower character with a wider range. The associated movements of the head were present. Nothing abnormal could be detected in the lens, choroid, or retina on ophthalmoscopic examination. The nystagmus apparently had been present at the time of birth. The father, who was stated to be affected with the same peculiarity, had noticed the abnormal movements of the child's eyes when he first looked at it, within a few hours of its birth.

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A visit was paid to the father; he was found to be little more than a youth, not quite 21 years of age; his eyes exhibited the restlessness of those of the infant. They were not only affected with a fine, yet marked, lateral tremor, but were continually on the move, as if unable to look at an object for more than a few seconds. His vision seemed normal, and on the ophthalmoscopic examination the retina and choroid presented nothing unusual. He stated that he had been told that the movements of his eyes had been present from his birth. There was no history of any nervous disease having occurred in the family. He, however, gave the interesting information that the child of the son of his mother's sister is affected with similar movements of the eyes. None of his brothers or sisters (three in number) have been affected. His own child is his first.

These cases are examples apparently of the true congenital nystagmus which is present from the time of birth, and thus differ from the nystagmus which develops in association with head movements, and is generally not noticed until the child is a few weeks old. True congenital nystagmus, also, unlike the form which appears rather later, more often persists to adult life, as it has done in the father. True congenital nystagmus appears to be most commonly associated with some defect in the lens, choroid, or retina. No such defect is present in either of these cases.

Faulty Methods of Fumigation.

The usual methods of fumigation have lately been superseded to a great degree by the formaldehyde-gas process. G. E. Pfahler (*Phila. Med. Jour.*, Aug. 16, 1902) has investigated the latter method and finds that it must be improved in application or else it will in turn be discarded. He exposed cultures of the ordinary germs in rooms carefully fumigated with formaldehyde-gas, after well-advocated methods, and permitted a large margin, both as regards the exposure and the quantity of material used. The results were almost entirely negative, and the fact that the most common forms of bacteria were so little affected may be taken as an indication that the germs about which we are in ignorance (measles, scarlatina, mumps, etc.), were probably not killed. The author thinks that a more satisfactory method of application will necessitate an apparatus capable of generating the gas either ten times as fast or in a more concentrated form.—*Med. News.*

SECTIONS OF PATHOLOGY AND DISEASES OF CHILDREN.*

COMBINED MEETING.

A DISCUSSION ON THE FETAL BONE DISEASES.

I.—J. W. Ballantyne, M.D., F.R.C.P,E., F.R.S. Edin.,
Lecturer on Midwifery and Diseases of Women, Medical College for Women, Edinburgh, Examiner in Midwifery in the University of Edinburgh.

ANTENATAL pathology so abounds in problems that to name any part of it is to suggest a problem. This is specially true of the fetal bone diseases. Even a superficial acquaintance with these morbid states at once raises the question whether the fetal bone diseases are not rather malformations of the cartilage; and in addition to this primary problem there are secondary ones connected with the etiology, pathology and pathogenesis of these maladies which are not less difficult.

The purpose of the present contribution is to consider the morbid states of the fetal skeleton in the light of the general principles of antenatal pathology, and to attempt thus to remove some of the difficulties which are associated with the subject and some of the confusion that surrounds it.

The Existence of Difficulties and Confusion.

It is an easy task to prove the existence in this subject of difficulties and confusion. An examination of the current text-books will do it; a survey of the special literature of fetal bone diseases will also do it well; the attempt to refer any given specimen to its proper place among the already recorded ones will do it; and the writing or reading of such a contribution as the present will do it most thoroughly and conclusively. Perhaps, however, the simplest, as it is the quickest, method of making evident some of the existing confusion is to refer to the nomenclature of the maladies. Here are some of the names which have been given to the diseases of bone met with at birth—fetal rickets, so-called fetal rickets, intrauterine rickets, micromelic rickets, annular rickets, chondritis fetalis, pseudochondritis, osteogenesis imperfecta, achondroplasia, chondrodystrophia fetalis, chondromalacic micromely, congenital cretinism, cretinoid dysplasia, osteoporosis, osteopsathyrosis, periosteal aplasia with osteopsathyrosis, defective endochondral ossification and rachitis congenita.

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* By courtesy of the *British Medical Journal.*

It need hardly be stated that all these names no not indicate different diseases of the fetal skeleton; many of them are synonyms, but just which of them are synonyms will puzzle the most skilled pathologist to determine. Sometimes it seems clear that we have isolated two well-marked types; then we find subvarities of each of these described and perhaps subvarities of these again; and then to our amazement we may discover among the subvarieties of the one type the other type itself making its appearance. It is needless, however, to elaborate this aspect of the subject; difficulties and confusion manifestly exist. Let us see rather whether it is not possible to clear away some of the difficulties, and bring in order where at present there is great disorder.

The Antenatal History of Bone.

The story of the formation of bone is a chapter out of the book of the history of the mesoderm. It is a story that we do not yet know fully, but even an imperfect knowledge is of value in the attempt to understand the diseases of bone.

Early in ontogenesis, perhaps even before the blastodermic vesicle has reached the interier of the uterus, mesoderm cells can be recognized between the ectoderm and entoderm. These cells form themselves into a solid layer round the notochord and neural canal, and constitute the paraxial mesoderm. From the mesoderm then there is an outgrowth of cells, some of which line the interior of the ectoderm and form with it the somatopleure, while others cover the outer aspect of the entoderm, and form with it the splanchnopleure. In the extension of the mesoderm thus produced a cavity appears called the celom, and the cells lining it become histologically differentiated to form the mesothelium. From the mesothelial part of the mesoderm are developed many structures, including the peritoneum, pleura, pericardium, striped muscle and the urogenital organs (kidneys, Wolffian bodies, testes, ovaries, Fallopian tubes, uterus, etc.); but with these we have not at present to deal. Another kind of tissue arises in the mesoderm, possibly as a derivative of the mesothelium, and to this the name of mesenchyma is given. At first the mesenchyma has a uniform appearance, and consists of cells "connected together by their own protoplosmic processes," with wide intervening spaces filled with a homogenous substance; but later in development a series of most striking and complicating changes takes place in this homogenous matrix, leading to the production of a great diversity of tissues. Changes take place also in the cells, but they are not apparently of great importance in connection with the development of bone. Among the diverse mesenchymal derivatives may be mentioned connective, mucous, cartilaginous, osseous and adipose tissue, blood vessels, lymphatics, unstriped muscle, marrow, membranes,

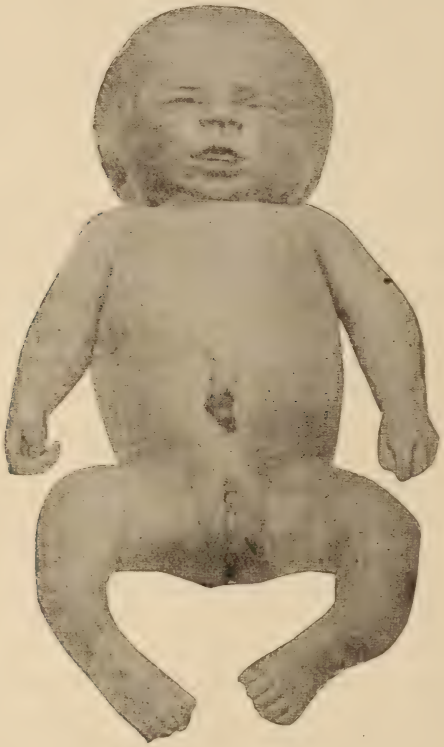

Fig. 1.—Type B. Hypoplastic chondrodystrophia.

ligaments, tendons and the synovial and bursal cavities. In the latter stages of their differentiation these structures truly appear to present few features in common, and have evidently traveled far in divergent paths; but there is a character of agreement in the prominence of the intercellular changes. In some of them, for example, the mucoid tissue of the umbilical cord, the intercellular matrix is only slightly altered mesenchyma; in others, for example, cartilage and bone, the original structure of a homogenous basal substance is profoundly modified. Wharton's jelly and bone are very unlike in their ultimate form, but both began as mesenchyma, and in both the ultimate form is largely due to the intercellular differentiation which has taken place.

Bone is peculiar among these mesenchymal tissues, in the fact that it may reach its final form by two different routes. It may or may not be preceded by a preliminary cartilaginous stage; chondrification may or may not precede ossification. In each case there is a preliminary membranous or mesenchymal stage; but in one instance the ossification is intramembranous or metaplastic, while in the other it is intracartilaginous or juxtacartilaginous, or neoplastic. In the former case, spicules of bone simply appear in the membrane, as is well seen in such a membrane-formed or dermal bone as the parietal or frontal; in the latter case the scaffolding of the future bone is first set up in cartilage, and then later, as the chondrinous framework is being taken down, the permanent osseous structure is seen going up. Even in the latter variety of bone formation, however, there is a certain amount of intramembranous ossification taking place, for a considerable part of the shaft of a long bone for instance, is the result of periosteal ossific activity. Into all the details of these different methods of ossification it is impossible here to enter, and indeed, many of the details are insecurely known; but there can be no doubt that whatever may be the advantages of the interpolation of a cartilaginous stage between the membranous and the osseous ones, its disadvantages stand out strongly when fetal bone diseases are under consideration. In this reminiscent projection of phylogeny into ontogeny—to employ the language of the mechanics of embryology—there is present the increased possibility of formative failure; the process may come to an abrupt termination in the cartilaginous epoch, and the stunted bone be derived entirely from the periosteum, and not at all from the replacement of cartilage by bone. In the long bones of the limbs, for instance, in which the neoplastic ossification is as a rule best seen, the changes in the cartilage at the ends of the bone, changes which are known to precede and to indicate commencing ossification, may fail to occur; under these circumstances one of the most typical of the fetal bone diseases, that which is called achondroplasia, is the result. It, at any rate therefore, is more truly described as a malformation of cartilage than a disease of the bone.

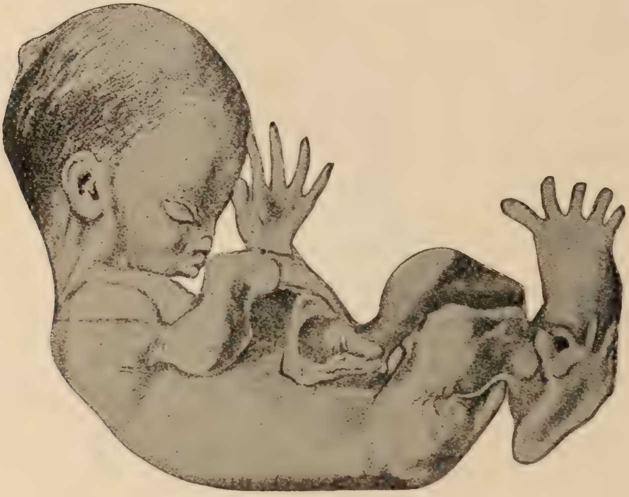

Fig. 2.—Type C. Hyperplastic chondrodystrophia.

Malformations and Diseases of Bone.

The morbid states of the fetal skeleton afford a very good example of the two phases through which the organs and parts of the body pass in antenatal life. There is the phase of development or structural elaboration and that of growth with functional activity, or, in other words, the embryonic and the fetal stages. When morbid causes act upon a part in the embryonic or formative phase, the result of their action will be the production of malformations; when they are effective in the later or fetal stage; diseases will be produced. Now the skeleton of the unborn infant is peculiar, in the fact that it remains long in the embryonic stage, that there is no clearly marked-off time when it can be said that the skeleton has passed out of the formative into the fetal phase. Ossification, which is the final

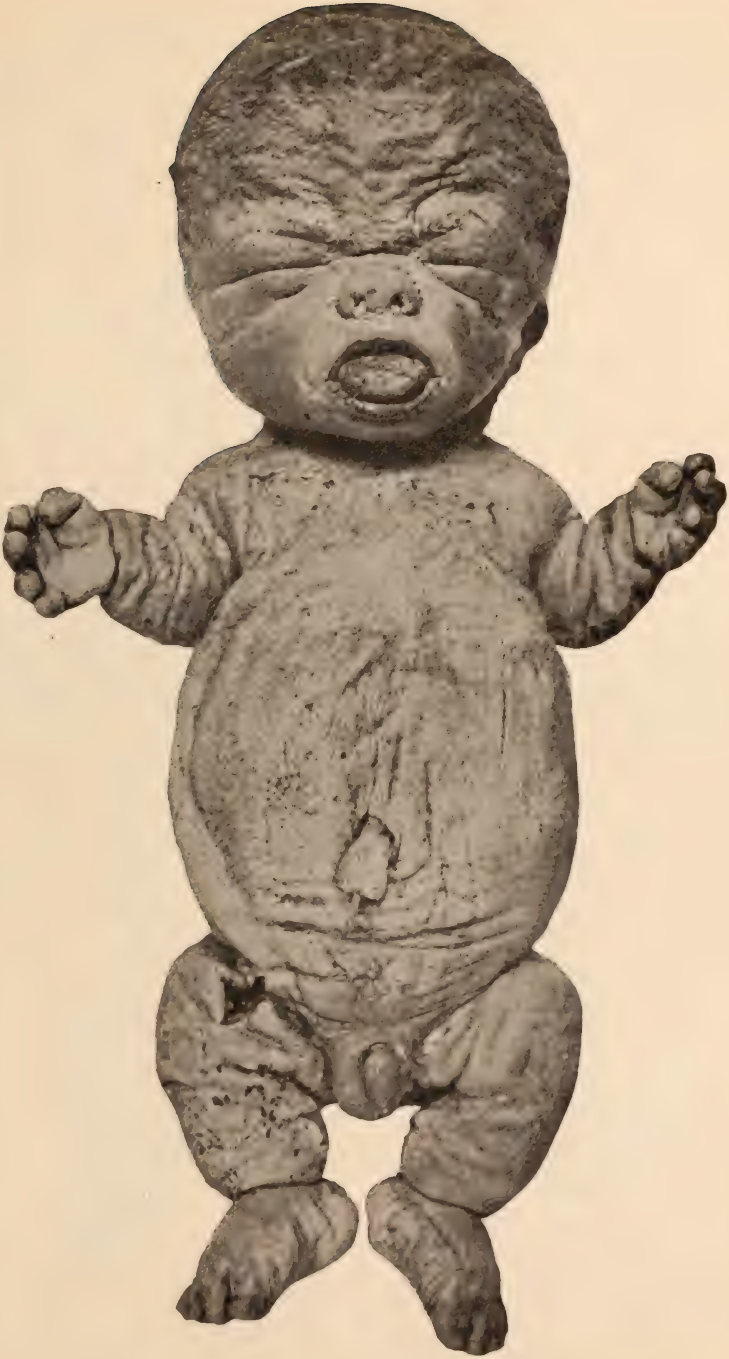

Fig. 3. Type D. Achondroplasia.

stage in the developmental history of the skeleton, begins in some bones, for example, the clavicle, in the seventh week of antenatal life, but in several bones it is not completed till birth or even later. Part of the skeleton therefore may be in the fetal while another part is in the embryonic stage of its existence. Herein lies the cause of much of the confusion which surrounds the subject of the fetal bone diseases; they are partly diseases and partly malformations; they are teratological diseases, so to say. Most malformations are due to arrests of development, the formative process coming to a stop although growth goes on; and many of the fetal bone diseases are no exception to this statement. The arrest may conceivably take place at any stage in the evolution of bone—in the membranous, in the cartilaginous, or in the osseous. In the monstrosity called anencephaly there is an arrest of the membranous formation of the cranial vault bones; no one thinks of calling anencephaly a fetal bone disease, it is so evidently a malformation; but nevertheless it is an arrest in the formation of the skeleton. In achondroplasia there is again an arrest, in this instance in the much later stage when ossification is taking place in the vicinity of cartilage, but many pathologists call this a fetal bone disease; it also is a malformation, but one developed much later in ontogeny, just as ossification in cartilage appears later in phylogeny than ossification in membrane. Between these two morbid states connecting links exist, and what I have called in my book* Type E of the fetal bone diseases is really a malformation in which no bone has formed in the extremities at all; the limbs in Type E (phocomely, as it is termed) are laid down in cartilage and get no further, for no periosteal ossification comes to supplement the defect. as happens in achondroplasia. Then again there are real diseases of bone such as are seen in the craniotabetic state, as occurs in my Type A. Some of the fetal bone diseases then are really malformations of cartilage, while others are truly diseases of bone.

Rickets.

It is now necessary to note how this generalization affects the question of the occurrence of rickets in fetal life. It is evident that if the causes which produce rachitic changes in the bones in later life are active in early fetal life, they will

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* Manual of Antenatal Pathology.

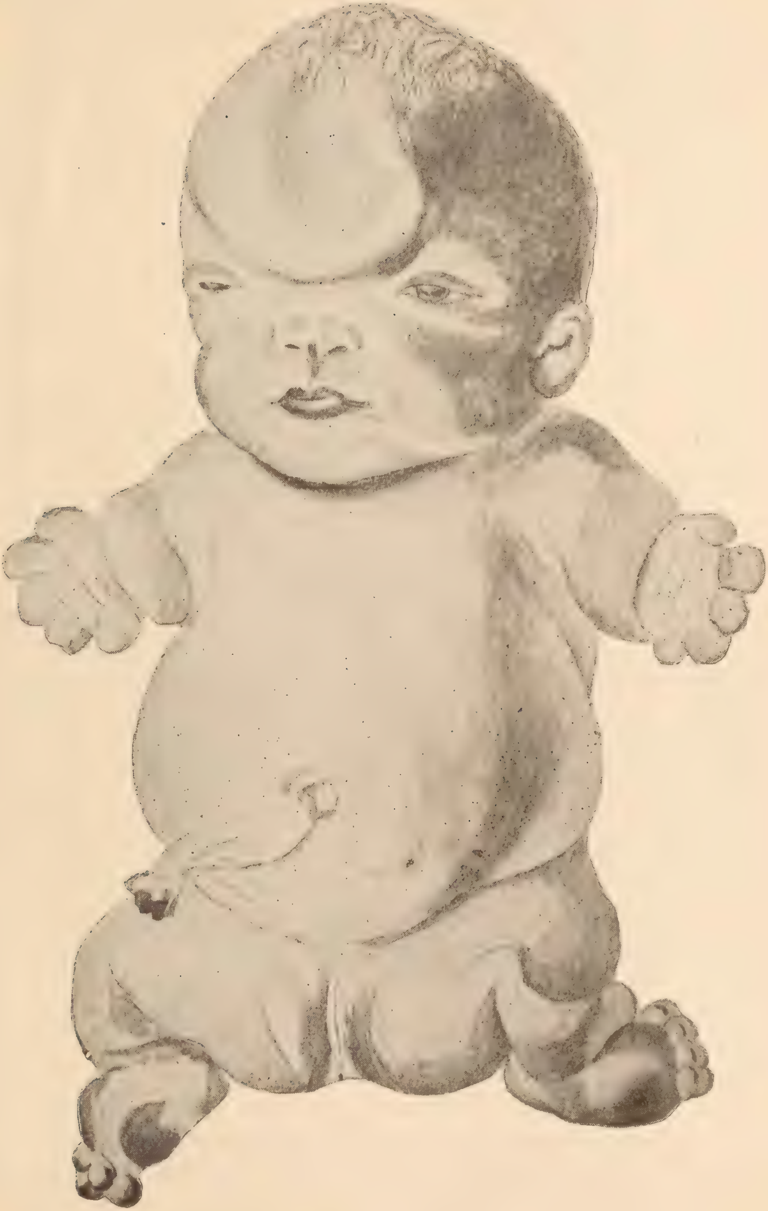

Fig. 4.—Type E. Phocomely.

not then produce the same changes (macroscopic or microscopic, naked eye or histological), for the bones have not been formed to the required degree. It is conceivable that they will produce other changes and it is a fair working hypothesis that they will lead to malformations of the skeleton. Some of the so-called fetal bone diseases (which as we have seen are really malformations of cartilage), then may be truly rachitic in the sense that they are produced by the causes of rickets while they are histologically not rickets. The cause may be the same but the effects may differ, the difference being due to the state of development of the part acted upon by the cause. This peculiarity of pathogenesis is not met with in antenatal affairs only; for two children may be subjected to the poison of scarlet fever and one show the rash and the sore throat, while the other develops only nephritis; in the latter case we say that the early and ordinary manifestations of scarlet fever are suppressed. In antenatal life the ordinary postnatal manifestations of rickets may be suppressed or modified by intra-uterine surroundings, or by the presence of formative and developmental processes such as do not exist in infancy or childhood. In one sense therefore it is possible that we may look upon achondroplasia or any other of the fetal bone diseases as rachitic; it may be due to the action of the same cause, whatever that may be, which produces rickets in later life. Of course a difficulty here emerges at once; the mothers, whose general health is such that we should be justified in expecting them to give birth to rachitic infants, very often do no such thing; and on the other hand apparently perfectly healthy mothers give birth to fetuses with the signs of achondroplasia, etc. I think these apparent anomalies in disease production are to be explained by the placental factor in antenatal pathology. The mother's body is as it were the atmosphere or biosphere in which the fetus lives; but it is through the placenta that changes in this biosphere react upon the fetal tissues. The placenta may so protect the fetus that it becomes the preferred part, as it were, of the two linked organisms (maternal and fetal), and is nourished perhaps even at the expense of the other parts. On the other hand where perhaps all else is healthy, the placenta may be defective, and then the fetus is not supplied with all the materials it needs, and its growth and development are interfered with. These considerations are, I think, sufficient to explain how a healthy woman may have an ill-nourished and perhaps rachitic fetus, while a cachetic or anemic mother may give birth to a healthy and well-nourished child. Further, the peculiarities of the intrauterine surroundings and the presence of developmental processes in the fetal skeleton ought to lead us to expect not the same histological and naked-eye changes as characterize infantile rickets, but a modification of these. All the time the same morbid cause may be in action and yet the results show diversity. With regard to the nature of the morbid cause which produces infantile rickets we are still in doubt; but it may quite conceivably be toxinic, and if so there is no inherent improbability that it may act upon the fetus in utero through the placenta. The fact Charrin and Gley have succeeded in producing a condition in fetal rabbits resembling rickets by submitting the parent animal to the influence of the toxins of the bacilli of diphtheria, tubercle, and blue pus* is so striking that I shall bring the contribution to an end with the reference to it.

I may add that I have not thought it necessary to enumerate the characters of the five types of fetal bone disease which are described in my work,† but the accompanying illustrations exhibit four of them. Of the first type it is not possible to give an illustration, for it is characterized simply by slight softening of the bones, for example, of the cranial vault. In Type B there exists along with softeness of the bones of the head some bending of the long bones and a certain degree of fagility of them. In Type C the cartilaginous extremities of the limb bones are enormously enlarged, while the shafts are stunted and fragile. In Type D the shafts of the limb bones are also much stunted, but the extremities are not nearly so much enlarged; in both these types there may be premature ossification of the bones of the basis cranii which are formed in cartilage (os tribasilare). Type E is really a monstrosity, but it exhibits the degree of arrest of bone formation of the extremities in which there is nothing save tiny spicules of cartilage for a framework.

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* Compt. Rend. Soc. de Biologie, 10 s., iii, 220, 1896.

† Manual of Antegatal Pathology and Hygiene, p. 334, 1902.

II.—W. STOELTZNER, M.D.,

Assistant Physician, Kgl. Universitäts-Kinder-klinik, Berlin.

FETAL BONE DISEASE.

Dr. Stoeltzner said: I take it as an especial honor that I have been asked to contribute a paper on fetal diseases to this meeting of the British Medical Association, and beg to offer my thanks to my colleagues for their invitation to me to take part in the proceedings. Allow me, in the first place, to say that I have carefully read what Dr. Ballantyne has written on the subject in his recently published work on antenatal pathology, and while generally my views are in accordance with his, yet there are some points of difference between us concerning which I would like to make some remarks. Dr. Ballantine classifies congenital bone diseases by dividing them into five types, which are connected with one another by very various degrees of relationship. Thus his types C, D, E., are closely related to one another; in all three there is a disturbance of the endochondrial ossification, while the periosteal ossification is normal. In the Types A and B, on the contrary, there is exclusively or in part an arrest of periosteal ossification, either of several groups of the bones or of one group especially—namely, the flat bones of the skull. I should prefer to divide these fetal bone diseases into two groups instead of five: the first group including A and B, those in which there is an arrest of periosteal ossification; the other group including C, D and E, being made up of cases of chondrodystrophia in the wide sense. But in some cases there is a dystrophy of the cartilage with also defective periosteal ossification. I should also like to make some remarks concerning the relation of fetal bone disease to rickets. In the first place the forms of chondrodystrophia, such as are included under Ballantyne's types C, D, E, have certainly nothing to do with rickets. I am showing histological specimens of Type C and Type D, and you will note that they are cases of pure chondrodystrophia. In the specimen which illustrates Type D the most important point is the failure or imperfect formation of the columns of cartilage cells. In many epiphyses the proliferation layer is entirely absent, and in other epiphyses it is imperfect; sometimes the cartilage layer, which corresponds with the proliferation layer in normal cartilage, is represented by shrunken cells and the cartilage has undergone mucous degeneration. There is no trace of the changes which are characteristic of rickets. Very similar conditions are noted in Type C. In spite of the marked thickening of the cartilaginous epiphyses, the columns of swollen cells are imperfectly developed. Of rickety changes there are none. I have no preparations which illustrate Types A and B, having had no opportunity of examining such specimens. I should hesitate to call such cases rickets. I think the question of rickets or not rickets can only be decided by a histological examination. In other words, a given bone lesion cannot be said to be due to rickets from a clinical examination alone, or from the macroscopical examination of the bones at the necropsy; a histological examination must be made. As an example of this I have brought sections of the bones of a puppy which had been fed for eight weeks on food poor in lime salts. The appearance of the bones both during life and after death closely resembled rickets, but the microscopical examination shows that this experimental disease is not rickets. I have also brought with me specimens illustrating true rickets, for the sake of comparison; there will be no difficulty in seeing the difference. The specimen from the dog fed on food poor in lime is an osteoporosis with rickety-like changes in the periosteum and cartilage, but there is no failure of calcification of the newly-built osteoid tissue which is characteristic of true rickets. I have given this experimental disease the name of pseudo-rachitic osteoporosis. There is then a pathological state of the bones which closely resembles rickets, but the histological examination shows a marked difference. The Types A and B resemble rickets in their macroscopic characters in that there is craniotabes and softness of the bones, but, according to my view, should not be included under rickets; for, so far as microscopical appearances show, there is always to be found only a defective new formation of bone (perhaps sometimes associated with increased resorption), but never a rachitic change. The theoretical possibility that rickets may take place during fetal life must be admitted, but, as far as I know, no single case has been recorded which can certainly be stated to have been true fetal rickets.

III.—Prof. A. Baginsky, M.D.,

Berlin, Germany,

Professor Baginsky said: I would only wish to make a few remarks upon Herr Stoeltzner's conclusions, as I have made no personal observations upon fetal changes in the bones, and so am not in a position to criticize the highly interesting contributions of our colleague, Dr. Ballantyne. But in regard to the general question of rickets and the diseases allied to it, I should like to bring forward some explanatory deductions from a few microscopical specimens which I have exhibited here. As regards Herr Stoeltzner's statement that the bone diseases caused by the experiments were not rickets, but only simple osteoporosis, I cannot agree with it as far as concerns the complaint which I have artificially evoked in young dogs. Many years ago I brought forward, in a memoir published in Virchow's *Archiv*, the proof that by completely withholding calcium salts from a young dog severe genuine rickety changes in the bones could be producod, which gave rise to the general condition of the affection both as regards its clinical picture and the microscopical and chemical changes in the bones. Virchow himself and Carl Friedländer saw the bones at the time, and recognized that they exhibited the classical proofs of rickets. which were also shown by the microscopic picture which I then published in Virchow's *Archiv*. Chemical investigation also gave unquestionably the results which are always obtained with rickety bones. In a second dog the result was even more marked, as it was fed with lactic acid as well as being deprived of calcium salts.

My own researches hence show beyond any possibility of doubt that genuine rickets can be produced by experiment. So much for this point.

As far as concerns the microscopical preparations exhibited you will find the first to be a section through the rib epiphysis of a child, the subject of acute rickets. It was taken from a child of under a year old which was admitted on March 24, 1898, to the Emperor and Empress Frederick Children's Hospital, with severe pains in all the joints and also over the diaphyses, with extraordinary softness and plasticity of the bones, which seemed to have especially attacked the diaphyses of the long bones. The child had a high temperature, and in the course of six days contracted bronchopneumonia, which carried it off. At the necropsy were found, besides the bronchopneumonia, small hemorrhages in the pleura; a large, very fatty liver, and marked swelling of the diaphyses and epiphyses of the bones, accompanied in the former case with thickening of the periosteum.

The first specimen shows the epiphysis of a rib with the following microscopical picture:

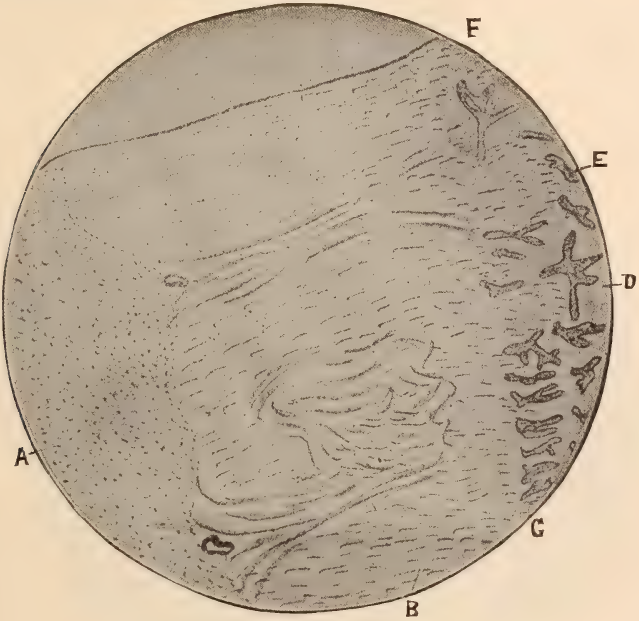

Fig. 1.—Longitudinal section through the junction of bone and cartilage in a rib; acute rickets. A, cartilage; B, osteoid substance with islets of bone; C, epiphyseal line; D, marrow; E. columns of bone; F, epiphyseal line.

The cartilage zone of irregularly arranged cartilage cells passes over into an extensive irregular zone of cartilage cells arranged in rows. The epiphyseal line is broken through in various places by large masses of osteogenetic tissue which is continued deeply into the cartilage zone. On the other hand, the masses of cartilage cells penetrate deeply into the marrow spaces. These are wide and roomy and filled partly with irregular, sometimes multinuclear, osteoblasts, but chiefly with cells with flat nuclei. There is nowhere any visible sign of hemorrhage. No hemorrhages or vascular obliterations were found anywhere in the bones or epiphyses of this case.

In entire contradistinction to this both the other two specimens exhibit marked hemorrhages and vascular thrombi in the epiphyseal zone and adjoining medullary spaces of the affected bones. The specimens were taken from a child (Käbisch) who at the age of 8 months was admitted to the hospital on October 12th. It presented the typical clinical picture of the affection described as "scorbutus of infants" (Barlow's disease), with at first slight, later high, temperature, up to 106.2; this was very changeable, as it sprang up from 99.2°. There was much swelling and redness of both thighs. The gums were free from hemorrhage. The blood showed no abnormalities. The proportion of white to red corpuscles was 1 to 380. The affected limbs appeared to be excessively painful. The child sank as the result of collapse and increasing fever.

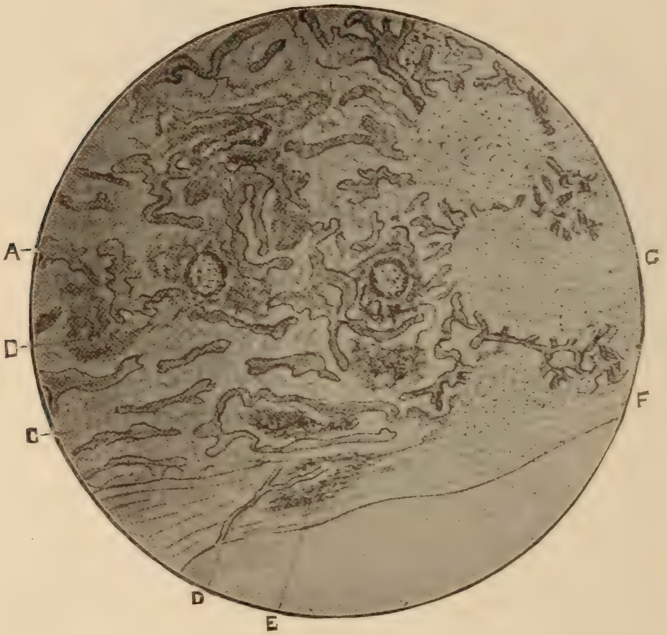

Fig. 2.—Longitudinal section through the osseo-cartilaginous border of a rib in Barlow's disease. A, bone lamellæ; B, hemorrhages and heaped-up blood pigment; C, marrow; D. blood vessel; E, hemorrhage; F, periosteum; G, cartilage.

The necropsy revealed an enormous effusion of blood in both thighs which had lifted the periosteum bodily from the bones. In addition to this there were hemorrhages in the parenchyma of the kidneys; and slight myocarditis was also present.

The specimens before you are:

1. A simple section through the epiphysis of a rib.

2. A longitudinal section through the thickened periosteum of the femur.

On microscopical examination of the two the following appearances can be seen:

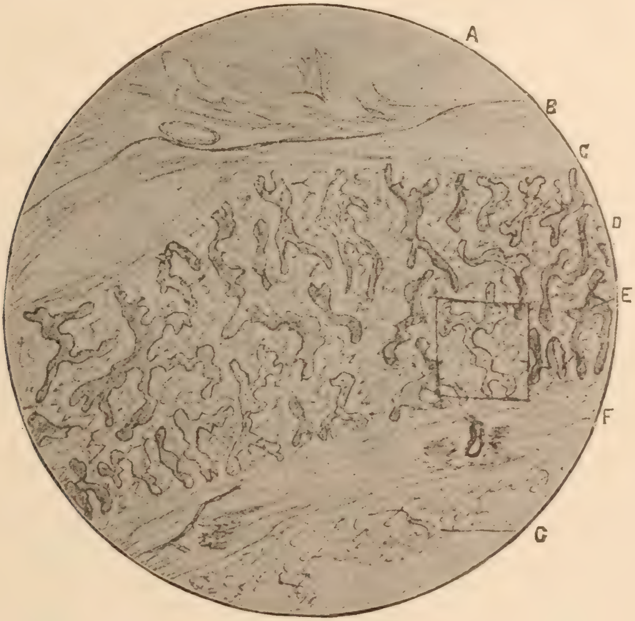

Fig. 3.—Longitudinal section through the femur in Barlow's disease; the periosteum is lifted up by hemorrhagic exudation. A, musculature; B, C, periosteum; D, marrow; E, bone lamellæ · F, vascular connective tissue with hemorrhages; G, blood.

The epiphyseal line appears to be not straight but twisted and irregular. There is no evidence of the penetration of cartilage cells arranged in rows into the osteoid zone; at most one sees single cartilage cells cut off from the young cartilaginous tissue. The zone of cartilage cells arranged in rows is noticeably very narrow. The medullary spaces are sensibly narrower than in specimen 1. In their arrangement and flattened appearance the cells resemble the picture of connective-tissue cells preparing for ossification. In the middle between them are seen fairly large masses of blood pigment and aggregations of red corpuscles. The vessels are much dilated and filled with blood, so that the whole area of ossification gives the impression of a tissue filled with thrombosed vessels and exuded blood.

The periosteum is thickened and beset with vessels and fresh hemorrhages. To it is attached a recent zone of ossification in which are embedded cells which look like large swollen cartilage cells and also new osteoid tissue. Beyond the bone is situated a highly hemorrhagic piece of tissue, and last of all comes pure blood.

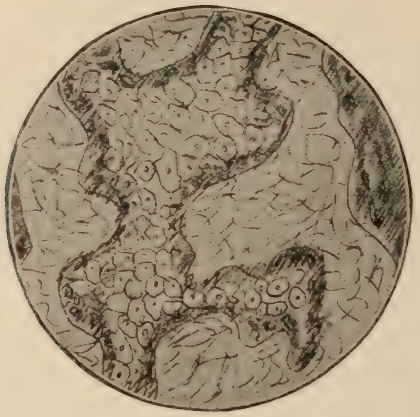

Fig. 4.—One of the faintly-stained spots from the zone of ossification in specimen ; more highly magnified ; cartilage cells. At the periphery of the bone lamellar bone corpuscles; in the middle macerated cartilage cells.

We learn from the specimens what I have already many times repeated, especially some years ago at the Medical Society of Berlin, namely, that one can easily distinguish the scorbutic changes in the bones from the rickety and that both diseases may coexist in the same child without having any more intimate connection with each other. The clinical picture of the two affections may admittedly approach more closely, if, as in our second case, no gingival hemorrhages are present, and visible hemorrhages are also wanting. But the general condition of the child will determine the choice of the one or other diagnosis.

IV.—Dr. Jules Comby.

Physician Hôpital des Enfants Malades, Paris.

RICKETS AND ACHONDROPLASIA.

The existence and relative frequency of congenital or fetal rickets were formerly too readily admitted. If a new-born infant presented a softening of the bones of the skull, multiple fractures, osseous deformities, etc., there was no hesitation in declaring it to be rickety. Today one would not dare to do this before having eliminated hereditary syphilis, osteomalacia, osteoporosis, cleido-cranial dysotosis and achondroplasia. All these diseases of the skeleton, which formerly were ill-understood, have gained from fetal rickets all the territory which it has lost and which it has occupied unrighteously. So much so was this the case that it has been doubted (and for my part I will go that length) whether intrauterine rickets existed. If we take the observations published under the title of fetal rickets we shall find very few of them that resist a severe criticism. Chaussier[*] points out in one fetus 43 and in another 112 fractures. Nothing, however, proves that those multiple intrauterine fractures were of rickety origin nor is rickets established in the observations of Notta[†]; fetus with soft head with 15 fractures (12 recent, 2 consolidated and 1 in process of consolidation). Besides the traumatisms of pregnancy there is a special fragility of the bones, osteoporosis, osteopsathyrosis, which explains the majority of these fractures; further, this fragilitas ossium may be continued after birth. and Dr. Henry Ashby has recently published an interesting example.[‡] In this author's opinion the sufferings and privations undergone by the mother during her pregnancy determine a fetal osteoporosis which has nothing in common with rickets. However this may be, the diagnosis of such cases presents difficulties, and one can understand that the question has raised controversies. In another category of facts we find achondroplasia, a very curious illness, which everybody formerly confused with rickets and whose place in nosology has been well determined by the labors of Parrot, Depaul, Porak, Kaufmann, etc. It is important that practitioners should learn clearly to distinguish the morbid species, and to that end we should publish all cases of it that come under our notice. Here is an example which I met with last year, and photographs of which here produced give a faithful representation of the features. On Angust 6, 1901, there came to my out-patient department at the Hôpital

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[*] Bulletin de la Faculté de Medicine, Paris, 1813.

[†] Anat. Soc., 1849.

[‡] Dr. H. Ashby, A Case of So-called Fetal Rickets, Report of the Society for the Study of Diseases in Children, vol. 1, 1901.

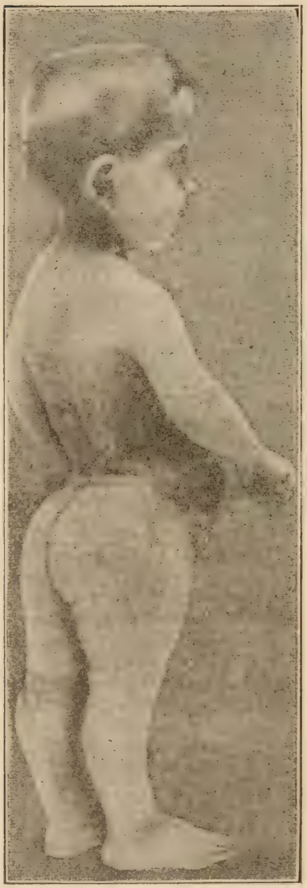


Fig. 1.

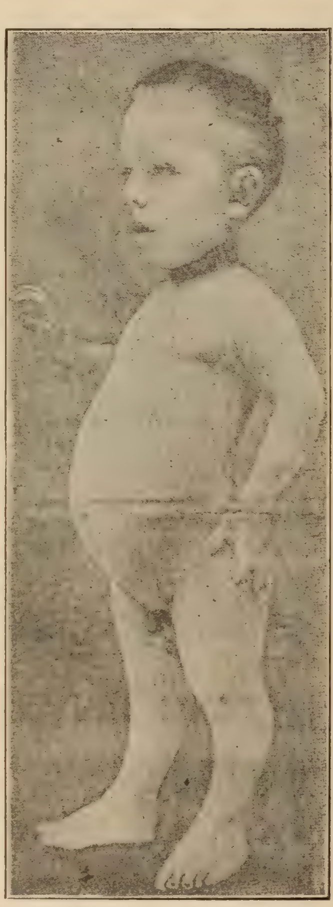


Fig. 2.

des Enfants Malades (Paris) a boy aged 5½ years who until then had been regarded as rickety. The father, aged 39, is healthy, and measures 1 m. 66 in height. The mother, aged 36, equally healthy, is of moderate stature; the maternal grandfather was small, short, and his extremities (feet and hands) were broader than they were long. The child was born at term after a difficult labor, nourished at his mother's breast to the age of 12 months; walked at 18 months, there was no delay of detention or of speech or of intelligence, which has always been lively. What strikes one at first sight is the size of the head contrasting with the smallness of stature. The skull measures 53 cm. in circumference, the face is broadened, the physiognomy is that of a very intelligent child, although the mouth is a little open owing to adenoid vegetations, which are easy to recognize by the touch; the anterior fontanelle has long been closed. The total weight of the body (15,300 grams) differs very little from the mean for children of the same age. The stature, however, is very inferior, 86 cm. instead of 102. This child, aged 5½ years, has the stature of a child from 2½ to 3 years, the deficiency does not affect the whole body, but exclusively the limbs, the long bones of which are notably shortened; the arms and forearms are only 11 cm. in length, the hands broad square (fingers spread out) have a length of 9 cm. from the radio-carpal joint to the end of the middle finger. In the lower limbs we find a total length of 32 cm. from the iliac crest to the malleolus, the leg (13 cm.) is longer than the thigh (13 cm.), and from that point of of view seems normal. There is a marked lumbar curvature with lateral depression of the ribs, this last deformity recalling rickets, a slight curvature of the tibius also recalls this last disease. The belly appears all the larger and more prominent since the lumbar lordosis is more marked; it has a circumference of 57 cm. at the level of the umbilicus. The gluteal muscles are thick, large and bulgy, the musculature of the whole body, moreover, is strongly developed, and the child when naked has the look of a little athlete; the generative organs are normal and in perfect condition. The dwarfishness in this case does not correspond to an insufficiency of general and symmetrical development; the head and the trunk, the bones of which are not developed at the expense of the cartilage of ossification and grown normally, and their dimensions are at least equal to those of children of the same age. If the stature is short that depends on the shortening of the lower limbs which, as compared with the normal state, are from 15 to 20 cm. behindhand in development. We are therefore in the presence of a micromelic dwarf, not at all rickety, having a large head, a normal bust, lively intelligence, flourishing nutrition (fine muscular development, agility in movements, perfect working of all the organs). When one keeps well before the mind the chief features of this singular disease, of this chondrodystrophia fetalis, one will not any longer confound it with rickets, and the number of cases of fetal rickets will be reduced to a negligible quantity.

REPLY.

Dr, Ballantyne said he thought that some of the apparent difference which existed between Dr. Stoeltzner's and his own views could be explained by the fact that they ought not to expect the same changes in early fetal tissues as in infantile tissues. The cause which produces infantile rickets may be active in fetal life, but we ought not to expect that before the close of the first seven months there suould be similarity in the histological appearances. We ought rather to look for diversity of results in the presence of similarity of cause. With regard to adult achondroplasia, to which Dr. Jules Comby had referred, it was certainly very interesting that such cases survived birth and functioned well; and there were a few cases on record in which an achondroplasiac mother had given birth to an achondroplasiac child. "Fetal rickets" truly was rare, and infantile rickets was common; but this, he thought, might be explained by the action of the placenta, which possibly regulated fetal metabolism, and saved many a fetus from morbid influences.

Street Cars and Germs.

While the average adult should inspire 396 cubic inches of fresh air a minute, this is impossible in the street cars of today. A New York Sanitary engineer found as much as 26.2 parts of carbonic acid gas per 10,000 volumes of air in the trolley cars in New York City. This is to some extent due to insufficient heating of the cars, the windows being in winter necessarily tightly shut. The cocoanut-husk mats on the floors of the cars have been examined, single fibers 1½ inches long holding from 3,000,000 to 4,000,000 bacteria. And yet this air compares favorably with that found on many railroads. In the Mount Cenis tunnel the air contains 107 parts of carbonic acid; in cars in the Mersey tunnel in England, 26.4; in an electric car in the new Boston subway, 24.97, and in the Metropolitan Railway tunnel in London, 98.4 parts per 10.000 volumes.—*Phila. Med. Jour.*

AN OBSCURE CASE OF ENLARGED LIVER AND SPLEEN IN A BOY.

By GEORGE B. YOUNG, M.D.,
Passed Assistant Surgeon United States Marine Hospital Service,
Louisville, Ky.

AT a recent meeting of the Louisville Clinical Society, Dr. Young presented a boy who for several years, every five or six months, has had an attack of catarrhal jaundice. These attacks have not usually interfered with his work, but the present attack is much more serious in character.

Two brothers of this patient, his father (now an elderly man), his father's brother and sister and seven cousins are also subject to attacks of a similar character every few months.

This boy comes to the United States Marine Hospital complaining of pain in his side, especially upon movement; he has no fever; his spleen extends below the ribs, and the splenic notch can be plainly felt; his liver is apparently the size of a ham.

While the case has not been thoroughly investigated, it is believed to be one of those rare instances of hereditary leukemia. A radiograph of the patient will be made in order to see just what will be shown by this means. The patient is presented especially because the diagnosis is not certain, although it is believed when his blood is examined it will be found that he has a leukemia.

CONTINUED REPORT.

At a meeting of the same society one month later Doctor Young reported that he had examined the blood of the boy and found the hemoglobin fully 90 per cent. So far as could be determined his blood showed nothing abnormal, there being no indication of leukemia. That the patient was still in the Marine Hospital under treatment, and his spleen appeared slightly smaller. His color remains the same (jaundiced) and every now and then he has an attack of nausea and vomiting. His temperature remains normal, appetite good, bowels loose; he has on an average four actions in the 24 hours.

The doctor said that he had been driven to the conclusion that the peculiar color of this boy, if he might be allowed the expression, was a "normal abnormality"; that it was hepatogenous, never hematogenous, that the pigmentary deposit in the skin had become permanent, that it did not depend upon his present condition, but was due to antedating prolonged jaundice.

The consensus of opinion when the patient was before the society was that the heart murmur present was due to anemia, but the blood examination showed no evidence of marked anemia, so the murmur is probably not functional.

Doctor Cheatham stated that he found the optic nerves very pale upon examination with the ophthalmoscope. The boy reads a great deal, and has developed no symptoms referable to his eyes.

New Treatment for Parotiditis.

From the benign course which this disease usually follows has arisen a somewhat indifferent mental attitude as to its treatment, yet when its possible complications are taken into consideration an effective therapeutic measure for its control must needs be welcome to all physicians. E. Grande (*Gazz. degli Osped.*, Aug. 10, 1902) offers a valuable suggestion in his adaptation of guaiacol ointment to the treatment of the disease. In a series of 12 cases he has had only good results from the use of the remedy, pain and swelling disappearing after two or three applications, and in some instances after one. The surface irritation observed when this remedy is used in orchitis and epididymitis is absent in parotiditis. The writer uses a 5 per cent. guaiacol ointment, applying it to the entire parotid region, and covers this with carbolized cotton. A bandage is then applied with some compression. The dressing is removed within 24 hours and the medicament reapplied, this procedure being repeated as often as necessary. The author thinks it possible that the volatile nature of the remedy may facilitate the penetration of its antiseptic properties to the oral cavity and pharynx, thus giving it an added value in the treatment of parotiditis.—*Med. News.*

SOCIETY REPORTS

SOCIETY FOR THE STUDY OF DISEASE IN CHILDREN.

Meeting held at the rooms of the Medical Society, Chandos Steeet, W., on Friday, October 17, 1902.

Dr. G. A. Sutherland in the Chair.

Mr. W. M. Burgess, Harlesden, showed a boy of 4½ years old who had been treated for a capillary nævus on the left side of the neck, by nitric acid and by the actual cautery.

Mr. Francis Jaffrey preferred excision as a treatment for nævi unless they were situated around the orifices.

Mr. Walter Edmunds relied upon the electric point for their treatmant on che face and considered that Mr. Burgess' result was good.

Mr. Carless also thought the result satisfactory, but he preferred excision. He called attention to nævi which had been left alone and which had remained quiescent for years but which suddenly burst into activity and became almost angiosarcomatous.

Dr. C. W. Chapman spoke, and Mr. Burgess replied.

Dr. E. Cautley showed a moderately rickety boy, aged 13 months, with great enlargement of the spleen and some enlargement of the liver. Leucocytosis was a feature of the case. Five weeks' hospital treatment failed to benefit him. He was discharged and quickly readmitted with numerous petechial hemorrhages, and numerous myelocytes were found in the blood. He improved and was discharged in six weeks' time. When shown, the spleen was still very large, but he was not anemic.

Dr. R. Hutchinson thought the case must be placed in that group of anemias associated with splenic enlargement, which was quite peculiar to children and which might be termed the splenic anemias of infancy. He had never seen more than 10 to 13 per cent. of myelocytes in the blood, and when there were a large number of these corpuscles the cases fared badly. Microscopically, as far as his experience carried him, all that could be seen was a general increase of the fibrous tissue, a condition common to many splenic disotders.

Dr. A. E. Sansom said there must be a cause for the condition but it was a very subtle one. Evidently the child has taken some poison into its system which had produced what almost might be called "a malarial intoxication."

Dr. C. W. Chapman asked whether these cases were more prevalent among the poor than the rich.

The Chairman (Dr. G. A. Sutherland) enquired as to the prognosis, which he believed to be good, in the absence of some intercurrent complaint to which such cases were liable. He was of Dr. Sansom's opinion, that some poison was absorbed into the system which produced the ill-effects.

Dr. Cautley, in reply, said in his experience the prognosis was good. Cases which succumbed nearly always had some other associated ailment, often tuberculosis. His case showed, he thought, that numerous myelocytes did not necessarily indicate a fatal prognosis.

Dr. L. GUTHRIE showed an infant 4 months old who suffered from **dilatation of the stomach** which he thought was due to **pyloric obstruction**. The symptoms began at 6 weeks old with obstinate constipation and incessant vomiting, which latter had now ceased. The stomach was greatly enlarged, its lower margin extending 2 inches below the umbilicus and it held 14 ounces of fluid without causing sickness. Peristaltic waves passed across the epigastrium from left to right, The symptoms had been temporarily relieved by lavage, but now it was thought necessary to resort to an operation to obtain permanent benefit.

Dr. Cautley thought it would be interesting if Dr. Guthrie could rear the child without an operation. He suggested that he should make a further trial of washing out the stomach and prescribe a well-regulated dietary, and failing to benefit the child by these measures an incision might be made. Recently two cases under his care had been successfully treated by pyloro-plasty.

Dr. H. J. Simson narrated a case with symptoms typical of pyloric obstruction which disappeared when a suitable diet was ordered and the peristaltic movements of the stomach previously in evidence ceased to be noticed.

Dr. A. E. Sansom thought it was an excellent case for surgical interference.

Mr. A. H. Tubby deprecated gastro-jejunostomy and advocated pyloro-plasty.

Dr. C. W. Chapman thought that an exploratory operation could do no harm, and Dr. D. J. Armour said he did not see how any treatment short of an operation could benefit the child if it were a case of pyloric obstruction.

The Chairman (Dr. G. A. Sutherland) did not think the peristaltic waves pointed entirely to pyloric obstruction and suggested there was possibly some obstruction lower down.

Dr. Guthrie, in reply, said his original impression was that of Dr. Sutherland, but frequent subsequent examinations had convinced him that the paristaltic waves originated in the stomach and not in the bowels. He considered he had given careful dieting a fair trial and he was now inclined to ask a surgical friend to assist him and he proposed to leave the methods of procedure in the hands of the surgeon.

Dr. E. Cautley showed a girl, 15 months old, who had been under his care for **hydrocephalus** slnce the age of eight months, which had been arrested by repeated lumbar puncture. The hydrocephalus was secondary to basal meningitis. In all 35 ounces of cerebrospinal fluid were drawn off by repeated tappings, each being followed by a gain in weight and marked improvement of the general health. Although the hydrocephalus had been arrested the child was blind and lacking in intelligence.

Dr. H. Hutchinson said lumbar puncture was recommended in America for diagnostic purposes as well as being a therapeutic measure. He had tried it and his results had been much more disappointing. In two children fatal collapse oocurred. In resorting to permanent drainage in the lumbar region there was danger of direct damage to the brain. If tapping could be commenced earlier the blindness and imbecility might prevented.

Dr. White narrated the methods he had adopted to draw off the fluid from Dr. Cautley's case.

The Chairman (Dr. G. A. Sutherland) mentioned that the treatment had been abandoned in America and Germany. He called attention to the closure of communication between the ventricles of the brain and the spinal meninges in sequence to posterior basic meningitis. He did not intend to try puncture. He had suffered a similar experience to that narrated by Dr. Hutchinson in the way of sudden death following the operation.

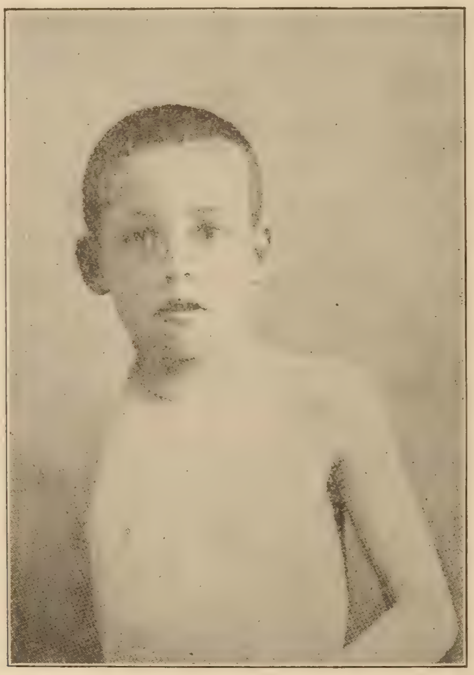
Dr. Cautley, in reply, thought the treatment he had adopted was likely to be successful in only a few cases.

ABSTRACTS

SARCOMA OF THE HUMERUS REMOVED BY THE INTERSCAPULO-THORACIC AMPUTATION.

Dr. W. J. Stewart McKay, in the *Australasian Med. Gazette* writes as follows:

The patient in this case was a lad, aged 11 years. The history was that five weeks previous to his admittance to the hospital he had fallen on his shoulder from a cart. A few weeks after the accident a swelling was noticed about the deltoid region, and this increased in size, but he suffered little or no pain. Not being willing to do an extensive operation on the boy, as it was his right arm, without being absolutely sure of the diagnosis, I made an incision into the tumor and removed a small portion of it, and Dr. Burfitt having cut sections pronounced it to be a sarcoma. The interscapulo-thoracic operation was then performed, the subclavian artery being tied and the axillary vein tied after the pectoral muscles had been reflected. The patient recovered.



I wish to bring this case forward to suggest that in future after the clavicle is removed that much time can be saved if the subclavian artery is not tied.

This view of the operation has been forced upon me lately after having had occasion to perform a series of Halsted's operations for the removal of malignant growth of the breast. In all of these cases, after reflecting and removing large portions of the pectoral muscles, the axillary veins and artery have been laid bare from the clavicle outwards; and in all of these cases both vessels could have been ligatured with great ease.

I would therefore propose that the steps of the operation should be as follows:

1. Reflection of the periosteum from the clavicle: This step has been ridiculed, inasmuch as it is urged that it is absurd to take the trouble to reflect periosteum which is about to be removed. In reality the reason for reflecting the periosteum is that the clavicle may be removed with consummate ease, and the periosteum and subclavius can then be removed later on.

2. After removing some portion of the clavicle an incision is carried from the center of the clavicle outwards, and the pectoral flap is formed, as laid down in the steps of the classical operation. The cephalic vein is severed and the pectoralis major is then reflected and held aside by an assistant. Hemorrhage will come from the muscular branches, and also from the acromial and humeral branches of the acromio-thoracic axis.

The surgeon is now on a plane where he encounters the pectoralis minor, having to its outer side the suspensory ligament of the axilla, and to its inner side the clavi-pectoral fascia; the latter being pierced by the acromio-thoracic axis.

The pectoralis minor is divided close to the corocoid process, and the clavi-pectoral fascia having been reflected the axillary vein and artery are exposed; the former being ligatured first and then divided, after which the artery is dealt with. I think that it will be an advantage to tie the artery below the point where the acromio-thoracic axis is given off, so that we may preserve a good blood supply to the pectoral muscles.

After this the nerve cords are divided. The index finger is then placed under the subclavius muscle and the clavicular periosteum and the subclavius are divided, care being taken to seize the supra-scapular artery.

The operation is then proceeded with in the manner indicated in the classical description.

There is one point about this case that I should like to bring forward, and that is the very rapid development of the sarcoma after the injury.

During the last twelve months I have observed the same thing in three other cases.

In the first case a young lad injured his knee-joint, and a sarcoma developed soon after, and I had to amputate his leg through the thigh. He recovered.

In the next case the lad was kicked in the back of the thigh by a school-fellow. In three weeks' time there was a well-defined lump that increased rapidly. I removed the leg at the hip-joint, and the boy recovered. Dr. Jamieson and Dr. Burfitt both examined sections of the growth and pronounced it to be sarcoma.

In the third case a young woman had a fall from her horse. A lump was observed soon after on her back below her scapula, where she had been injured by the fall. I removed a portion of the growth and found it to be a sarcoma, and then proceeded to remove the whole growth, and at the completion of the operation there was a cavity left in her back, over the lower ribs on the left side, into which a soup-plate could have been put without difficulty. The patient recovered.

I am fully aware that *post hoc, propter hoc*, is a method of reasoning that is liable to lead one to the most fallacious conclusions; but these cases must direct one's attention to the fact that there may be some causal relation between traumatism and the development of a new growth.

SOME POINTS IN THE TREATMENT OF FRACTURES.

W. A. Lane (*The Practitioner*, September, 1902) says; A careful consideration of the changes which the accompanying radiographs show enable one to understand some of the mechanical principles which govern the development of our skeleton much more closely than can be learned from the normal skeleton alone or from the study of fractures in the adult.

I saw the child for the first time in July, 1899. She was six years old. She sustained an injury to her elbow joint a month previously. This had been treated by means of a right-angle elbow-splint and afterwards by a straight splint. There was a large amount of deformity of the elbow, flexion being limited to the extent shown in Fig. 1, while there was considerable over-extension owing to the fact that the limitation in this direction consequent upon the impact of the oleranon into the fossa was altered by the rotation of the lower fragment around a transverse axis.

There was little outward displacement of the epiphysis. The arm was massaged regularly, and a definite course of exercises initiated and followed out systematically with the object of gradually increasing the range of flexion and of rendering the fit of the joint as secure as possible under the circumstances.

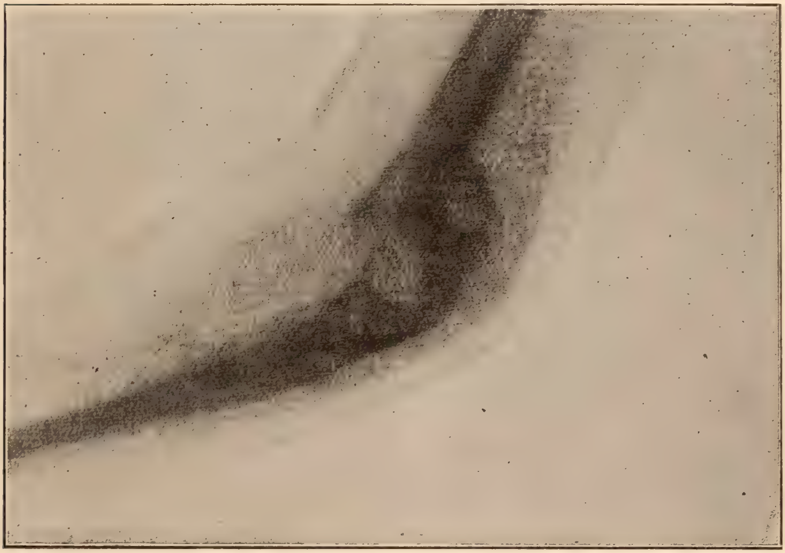


Fig. 1 represents a fracture through the epiphysial line of the lower end of the humerus. There is associated with it some comminution of the lower end of the shatt. The epiphysis is displaced upwards and backwards, and has rotated around a transverse axis. As about a month had elapsed since the receipt of the injury, a triangular area of callus can be seen occupyltg the interval between the posterior surface of the shaft and the epiphysis.

A careful examination of Fig. 1, taken on July 24, 1899, shows the backward and upward displacement of the lower fragment, which includes the entire epiphysis. Its upper surface looks almost directly upwards and but slightly forwards, and is irregular. Extending from the whole of that portion of the posterior surface of the shaft which is shown in the illustration to the upper surface of the fragment is a narrow, dark band of callus, which increases in breadth very rapidly as it approaches the epiphysis.

Projecting downwards from the lower end of the shaft is a jagged process of bone which by its impaction upon the coronoid process and head of the radius limits flexion to the extent shown in the radiograph.

Fig. 2, taken two months after the last (September 23, 1899) and three months after the injury showed very definite alterations. The narrow, indistinct, feebly-marked line of callus has increased considerably in breadth and density, and extends up the posterior surface of the shaft beyond the limits of the radiograph. Its density apparently equals nearly if not quite that of the shaft, which itself would appear to be slightly lighter in color than it was two months before, and therefore presumably of a lesser density.

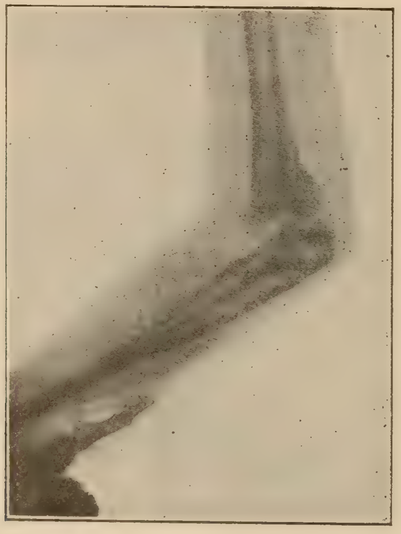


Fig. 2 shows the condition of the elbow three months after the receipt of the injury in a position of extreme flexion.

The lower end of the shaft has lost its projecting extremity and its surface has changed in shape, while the callus which filled the gap between the shaft and epiphysis has been absorbed in great part, so that an angular interval exists into which the already slightly blunted summit of

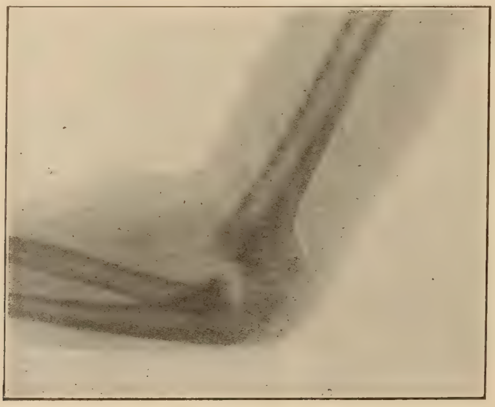


Fig. 3 shows the condition of the elbow six months after the injury in the position of extreme fléxion.

the coronoid process is received in flexion, which is now much more complete than it was.

In Fig. 3, taken in December, 1899, three months later, and six months after the injury, the density and breadth of the band of callus has increased still more obviously in proportion to that of the shaft. The lower end of the shaft has been absorbed so that its limit occupies a higher level as compared to the epiyhpsis than it did. It is also deeply indented to receive the still more altered coronoid process, while the range of flexion is increased correspondingly.

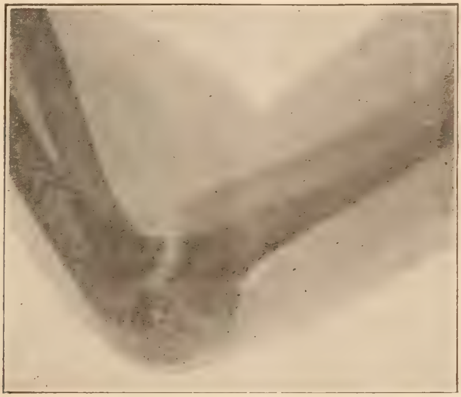


Fig. 4 represents the elbow joint in extreme flexion sixteen months after the receipt of the fracture.

Fig. 4 was taken in October, 1900, ten months after the last, and sixteen months after the fracture took place. In it the old shaft is seen as a comparatively pale band showing no evidence of compact tissue. Its lower extremity has been removed for a considerable length, and now takes no share in the articulation with the coronoid process. The callus formation has increased in extent and breadth, probably reaching to the upper limit of the shaft. It would appear that it transmits the large proportion of force, and that the original shaft is of little service.

The coronoid process is again altered in form to fit a cavity developing in the portion of the lower fragment above the epiphyseal line. The angle formed by the forearm with the humerus in extreme flexion is less than it was, but the amount gained in the ten months is relatively small as compared with that noticed in the previous shorter intervals.

The changes that have taken place in the shaft are a continuation of those that we have already observed. An entirely new shaft has been formed which has acquired the form, structure and function of the original one, while the old one has practically ceased to exist. By the time the child has reached adult life probably no vestige of the latter will remain.

Can anything be more interesting or instructive than the series of changes illustrated so clearly and unmistakably by these radiographs?

They demonstrate the fact that a structure retains its original form and texture only as long as it is exposed to the influence of the forces which originally determined them in the first instance. Remove the habitual action of these forces, or modify their direction, or let only one group exert an influence, and corresponding changes result at once. In other words, the structure of any portion of the skeleton varies with its function, or the use to which it is put.

CONTRASTS BETWEEN CERTAIN COMMON DISEASES IN CHILDREN AND ADULTS.

J. W. Carr (*Edinburgh Med. Jour.*, October, 1902) reports the following:

1. Acute Rheumatism.—The clinical picture of rheumatic fever in adult life is one of the earliest with which we become familiar. The acute synovitis affecting several of the larger joints, with resultant pain and a dread of movement, the flushed face, the profuse, sour-smelling sweat, the tongue thickly coated with a white creamy fur; the scanty urine, loaded with urates; the moderate pyrexia—all combine to produce one of the most easily recognizable of clinical conditions. We learn also that various other troubles are prone to occur, especially in connection with the heart; but these we usually regard merely as complications. We are almost equally familiar, fortunately, with the eminently satisfactory results commonly obtained by the administration of salicylate of soda, when given in adequate doses.

Very different is the clinical picture presented by acute rheumatism in early life. In a large number of cases the joint trouble is neither severe nor extensive; frequently it is so slight that it may be, and undoubtedly often is, altogether overlooked, the child being allowed to go about, as he complains but little, if at all of pain. In some cases an attack of rheumatic fever may occur without any recognizable synovitis whatever. In addition the tongue and the urine are in no way characteristic; there is no sweating and no more pyrexia than constantly occurs in children from most trivial causes, such as a slight catarrh or gastrointestinal disturbance. At first the natural inference is that in childhood, especially up to the age of five or six, rheumatic fever is not a common disease, and very mild when it does occur. As a matter of fact, the exact opposite is the truth. Rheumatism is exceedingly common in early life and extremely serious; but whereas in adults we are accustomed to regard it as essentially a disease having its chief manifestation in the joints, with possible cardiac complications, in children it would be wiser and more accurate to consider it as a disease which attacks any or every part of the heart (endocardium, pericardium and myocardium), with possible joint complications. The younger the patient the greater the liability to heart affection and the less to synovitis; so that not uncommonly an attack of acute rheumatism may be represented solely by an inflammation of some part of the heart, most commonly of the mitral valve. There is no doubt that cardiac murmurs, undoubtedly rheumatic in origin, occasionally arise, even in infancy, without there having been any definite symptoms of illness to attract attention; or, at most, the mother may have noticed that for a few days the child was unusually fretful, especially when moved.

In dealing with children it is imperative to be constantly on the watch for the slightest indication of rheumatism, and whenever any symptoms do occur, to examine the heart from day to day. This is particularly necessary when there is any family or personal rheumatic history, and the parents should be especially cautioned on the subject, as it is by no means uncommon for children suffering from acute but unsuspected heart mischief to be allowed to go about, even for trips and excursions, under the impression that they need a little change and fresh air. Whether a child will become a hopeless cardiac invalid and die at or before puberty or will recover, with a heart but little if at all permanently damaged, depends more upon the maintenance of complete rest from the very onset of the inflammation, and for a prolonged period after, than upon any other factor.

Other manifestations of rheumatism are common in children, though unknown, or at least much rarer in adults, a fact which fits in well with the modern view that it is a toxemia due to a special microörganism, and not merely an affection of the serous and synovial membranes. We have to recognize as additional rheumatic affections—pleurisy, generally with but little effusion; tonsillitis, either follicular in character or taking the form of a diffuse pharyngitis; rashes, either erythematous or urticarial in type—in fact, an erythema in a child should always raise a suspicion of rheumatism; subcutaneous nodules, so important as indicating, as a rule, the presence of active heart mischief, and chorea.

Another phase of rheumatism in childhood, rarely if ever seen in adults, is a subacute condition, in which the patient seems to be saturated with the rheumatic poison so that, it may be for weeks at a time, one manifestation has no sooner passed off than another supervenes, despite the most careful treatment. There is rarely much joint affection, but the heart is usually involved, and any of the conditions just mentioned are liable to develop.

2. Tuberculous Disease of the Lungs.—He notes the marked tendency of tuberculous disease in early life to become generalized, either as a blood infection, leading to acute miliary tuberculosis, or by the development of caseous foci in many different parts of the body. He then deals with the differences between tuberculous disease of the lungs only in children and adults.

The following, then, are some of the chief differences, according to the period of life at which the disease develops:

(*a*). The starting-point is often different.—In adults, of course, the disease usually begins at the apex of the lung; in children it quite as often starts from the root. In the former the bacilli conveyed probably by the inspired air tend, for various reasons, to lodge and develop at or near the apex; in the latter the tracheal or bronchial lymphatic glands are frequently first affected, either by bacilli which have passed directly from the lung, or possibly by some which happen to be in the blood, and which lodge and multiply in glands rendered hyperemic by chronic bronchial catarrh, just as they may attack a joint which has been predisposed by an injury to receive infection.

(*b*). The dissemination of the disease through the lungs is much more rapid and irregular than it commonly is in later life.—This applies to cases, not arising in the special manner just described, but due to direct infection through the air. Often there is no incidence of the disease at the apices, but caseous nodules are found scattered irregularly, and apparently indiscriminately, through all parts of the lungs, just in the same way as are ordinary patches of broncho-pneumonia; in fact, the distinction between the two diseases during life is often difficult, if not impossible. No doubt this broncho-pneumonic form of pulmonary tuberculosis does occur in adults, but certainly with much less frequency.

(*c*). Cavities are not common in tuberculous lung disease in childhood, at least so it is usually said, but the statement is not altogether accurate, for on the post-mortem table they are frequently met with.

(*d*). The physical signs are more or less different.—The absence usually of definite cavernous signs is due largely, as explained above, to the infrequency of extensive excavation, but in part also to the fact that even when cavities are present, they are difficult of recognition during life, owing to their being situated often in unusual and inaccessible positions, e.g., at the root of the lung, at the base or in the c nter of the lobe; and if, as is often observed, cavities are found post-mortem in cases of adult phthisis, which gave no certain evidence during life, even though situated in an ordinary and very accessible position at the apex, much more is it likely that the small vomicæ, which may form in any part of the lungs in children, should pass unrecognized.

Another point to note is that the physical signs may be exceedingly slight, even when the lung disease is most extensive. Whenever a child, especially over 18 months old steadily wastes and has more or less fever (not necessarily high), for which no obvious or sufficient cause can be found, the existence somewhere of tuberculous disease is highly probable even though the most careful physical examination gives no certain corroborative evidence; and it should be remembered that with few exceptions in childhood if there is tuberculous disease anywhere in the body the lungs do not long escape.

(*e*). The symptoms differ in many respects.—It will be sufficient to merely mention that in children night sweats are uncommon, and that both hemoptysis and tuberculous laryngitis are rare; the latter, in fact, being almost unknown. Children, of course, rarely expectorate.

3. Heart Disease.—Now, mitral disease in childhood runs in some respects a different course from that which it does in adults. Frequently the child is pale and wasted, the pulse regular and there is but little edema either of the limbs or lungs. It is most important to bear in mind first of all that heart disease (whether congenital or acquired) is one of the wasting diseases of childhood. Compensation may be sufficient to enable the actual requirements of the different tissues and organs to be met, but is rarely adequate to provide for growth also; consequently wasting and anemia result, and at puberty, when growth is most rapid, the strain often proves too great and death follows. If a child with valvular disease passes through the period of puberty without serious symptoms it may generally be assumed, *ipso facto*, that the lesion is not very severe. It follows too that, other things being equal, the prognosis of mitral disease is more serious before than after puberty. Of course in

advanced life the liability to degenerative changes again influence the prognosis unfavorably.

In the later stages of mitral incompetence in adults, irregularity of the pulse is a pretty constant and marked feature, and it is also to a less extent in mitral obstruction; whereas in children up to the age of 12 or therabouts it is rarely produced by mitral disease no matter how far advanced. When it is present in childhood it usually indicates meningitis though it may result from gastric disturbance; certainly it is rarely due to heart disease. Still more remarkable, however, is the way in which mitral disease may prove fatal from increasing weakness and wasting, with few or no symptoms of back pressure, the right ventricle apparently doing its work with fair efficiency to the last. In such cases the absence of dropsy, albuminuria and cardiac irregularity may easily mislead a practitioner into giving far too favorable a prognosis, especially as death is apt to occur quite suddenly from syncope, particularly if the heart is hampered by pericardial adhesions.

The physical signs of valvular disease are much the same in children as in adults, except that precordial bulging is seen far more frequently in the former, owing to the greater softness of their chest-walls. It is often particularly noticeable in cases of adherent pericardium. Even when present in adult life it generally indicates that the cardiac lesion commenced in childhood.

4. Disorders of Digestion.—Everyone recognizes the extremely important part played by digestive disturbances in the diseases of infancy, usually as a result of errors of diet. Children are apt to be credited with almost unlimited powers of digestion, and if by chance the physiological limits are exceeded, a sharp, but short attack of unmistakable gastritis, or gastroenteritis, is often regarded as the only penalty.

One of the most marked distinctions is that whereas adults suffering from purely functional dyspepsia rarely get much thinner, children waste considerably, a natural result of the occurrence of prolonged anorexia during the period of rapid growth. Again, ordinary chronic dyspepsia in adults rarely if ever causes any rise in temperature. whereas in early life it commonly produces some fever in the evening, it may be for considerable periods of time. A dry, hacking cough is also frequently present. Now when a child gets steadily thinner, has a good deal of cough and some pyrexia every evening, what more natural than that it should be regarded as tuberculous, and any digestive disturbance looked upon as secondary rather than primary. The results of physical examination in such a case are frequently equivocal, owing to the bronchial breathing and bronchophony often heard in a child in the upper interscapular region over the large bronchi, especially on the right ride; while, even if the lungs are apparently healthy, we may be quite unable to exclude the possibility of tuberculosis of the bronchial glands.

In some children with chronic dyspepsia, flatulent distension is very marked, and may give rise to more or less pain, and to a good deal of resistance when the abdomen is palpated. If evening pyrexia, wasting and perhaps occasional attacks of diarrhea, alternating with constipation, are also present, the combination closely suggests tuberculous peritonitis, and a considerable time may have to elapse before a positive diagnosis can be made. Simple flatulent distension, however, never produces the peculiar doughy feel which is so characteristic of the tuberculous disease, and is due to the matting together of the abdominal viscera, while, of course, the presence of free fluid in the peritoneal cavity would be conclusive evidence of the existence of more than functional disorder.

Night terrors, which although undoubtedly especially frequent in neurotic children, are certainly in many cases excited by gastrointestinal disturbance, and may be ineffectually treated by mere sedatives unless their cause is recognized. Syncopal attacks may undoubtedly be caused by dyspepsia, although the perhaps greater probability of petit mal must not be overlooked. Sometimes the two conditions seem very closely associated. Henoch has pointed out that serious asthmatic symptoms, with cyanosis and rapid breathing, may be due entirely to irritation of the nerves of the stomach in gastric catarrh.

Other symptoms which may be present are apt to excite a suspicion of intracranial disease, e.g., headache, particularly in the morning, mental apathy, grinding of the teeth and occasionally convulsions, though these are a result of gastrointestinal disturbance, are more frequently in infancy than in childhood, If, in addition to some of the above symptoms, constipation and perhaps vomiting are also present, a clinical picture results which may closely simulate that of the early stage of tuberculous meningitis. Any irregularity of the pulse usually points to the more serious condition, but is due now and then to the gastrointestinal disturbances alone.

Again it is important to remember that nearly all the symptoms so commonly attributed to worms are mainly due to dyspepsia.

Lastly, it is well to bear in mind that chills, particularly from insufficient clothing, or more frequently from its improper distribution, are undoubtedly an important cause of dyspepsia in childhood; less commonly perhaps than in infancy, but certainly far more frequently than in adult life.

PEDIATRICS

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ORIGINAL ARTICLES

GASTROINTESTINAL DISEASES OF CHILDREN.

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THIS subject is of far-reaching importance, inasmuch as the excessive mortality among infants during the summer months is directly or indirectly due to gastrointestinal disease. The maximum mortality rate follows closely the highest temperature of the heated season, viz., from June to September and this is especially true in the larger cities.

Many of these diseases, as they occur in infants, commence as an indigestion due either to the quantity or quality of the food ingested.—Ordinary dyspepsia, which may occur in the breast-fed child, is due to alteration in the normal composition of the mother's milk. Menstruation occurring during the lactational period is a frequent cause of dyspepsia; acute illness of the mother, or some profound emotional excitement may also affect the quality of the mother's milk. Proteids in excess in the mother's milk will occasion dyspepsia in the child and be evidenced by flatulent colic, loose stools and other symptoms of dyspepsia. A similar condition is noted in the artificially fed child. Other causes, sometimes very trivial indeed, will produce dyspepsia in children. These causes should be sought for and removed because dyspepsia is the leading predisposing cause of gastrointestinal infections.

The undigested and fermented food material furnishes a pabulum which favors the growth and development of the microörganisms already present in the intestinal tract, or introduced with the food. Numerous efforts have been made to isolate this factor in the production of these diseases. The roll of the bacterial flora in the production of disease has interested numerous observers, and while there is much that is obscure, the information at hand furnishes us guidance in the prevention and care of the gastrointestinal diseases of children.

In health we find bacteria constantly present in the alimentary tract. The meconium passed by the new-born babe is sterile, but within 12 to 18 hours bacteria appear in the intestinal discharges and thereafter during life.

In the milk fed infants two microorganisms predominate, viz., bacillus coli communis (found in the lower bowel), and the bacillus lactis aerogenes (found in the upper bowel). In addition to these organisms there are numerous bacteria, yeasts and moulds. Nuttall and Tierfelder have demonstrated that bacteria are not essential to the digestive process. To determine this cesarian sections aseptically performed upon four guinea pigs about to be delivered were made. The first pig was fed on sterile milk for eight days; it was then killed and its intestinal tract examined bacteriologically and found to be sterile. In the second observation the pig was fed both milk and cakes in order to find out whether vegetable nourishment could be digested without bacterial aid. This animal remained well, gained in weight, and after fourteen days was killed. The alimentary canal was found to be sterile.

An important fact is the relation of the number of organisms to the infection. Animals seem to have a relative susceptibility to certain microorganisms, this susceptibility varying with the number of germs introduced. For this reason the number of bacteria found in milk and their variety becomes a very important consideration. The opinion is general among bacteriologists and clinicians that:—

1. The acute gastrointestinal disorders of children cannot be attributed to a specific bacterium.

2. The toxic symptoms of gastrointestinal infection depend upon the introduction into the alimentary canal of poisonous substances which are contained in the food. For example, Vaughan isolated a toxic substance (tyrotoxicon) from milk, which was poisonous for man and animals.

3. Bacteria may be introduced from without, or the ordinary saprophytic bacteria which inhabit the intestinal tract, may take on a specific virulence.

4. The most severe disturbances are caused by the metabolism of bacteria; these microorganisms by their activity produce acids and cause decomposition of albuminoid substances; the products act as powerful irritants to the intestines and by injuring the intestinal wall gain access to the blood and lymphatics. In this way local and constitutional symptoms are produced.

5. There can be no doubt that specific intestinal infection may occur in infants. Typhoid fever may occur in young infants.

Excessive heat, bad hygiene, improper feed, over-eating, cold, etc., are important factors in the causation of gastrointestinal diseases.

Heat is a prolific cause inasmuch as it causes marked physical depression and thus renders the child more susceptible to infection.

Overfeeding is one of the most harmful factors and one most easily controlled. This applies especially to the artificially fed child. Again, if the child nurse when hot or thirsty, it is liable to cause derangement of the stomach from overfeeding. The mother should not nurse the child when she is is overheated.

Bad personal hygiene is another disturbing factor in the causation of gastrointestinal disease.

Pure air, clean surroundings and personal cleanliness are powerful therapeutic agents in the treatment of these diseases.

Atmospheric conditions, viz., heat and cold air, are also contributory factors. We have spoken of heat. Cold is a factor when, as frequently occurs in the spring and fall of the year, there is a drop of ten to twenty degrees and as a result diarrhea follows.

This is a catarrhal condition and usually yields readily to treatment.

Other causes of diarrhea are absence of pancreatic juice; the presence of acute bronchitis or summer cold; the careless and negligent personal hygiene of the mother in the care of the nipples; the ingestion of improper food by the cows, the milk thus becoming contaminated; nervous influence, such as worry, frights or profound emotional disturbances; weaning of the child sometimes causes intestinal disturbances and not infrequently an intestinal indigestion is set up at this time which will be more or less persistent.

Acute intestinal indigestion presents the familiar picture noted, as follows: Emaciation, nausea, vomiting, diarrhea and the intense restless, peevish condition caused by hunger. Food is taken eagerly, but as it is not assimilated, conditions are apt to grow worse and death may result. The infant dies of starvation. These cases require thoughtful care, good nursing and judicious oversight.

Another class of cases requiring great care are those of acute gastrointestinal catarrh (cholera infantum). This disease is most frequent during the summer months and in children one or two years of age, during the first period of dentition.

The onset of the disease is usually slow, being preceded by intestinal indigestion. It may come on suddenly with intense pain and griping in the stomach and bowels.

There is loss of appetite, fretfulness, pain, vomiting, purging prostration and collapse. The vomiting may be persistent; the pulse is small and rapid; the stools are thin, fecal at first, but later are like water, frequent, and have little if any color, and simply leave upon the napkin a greenish stain. The stools may contain mucus, and are free from bile; the abdomen is smaller and tender over the colon; the emaciation of the body is rapid and exhaustion comes on rapidly; restlessness follows, and later, as exhaustion becomes more pronounced, somnolence supervenes and death follows. The temperature record of such a case shows a difference between surface and internal temperature.

The surface temperature may be 98.6° F. while the rectal temperature will be above 103° F. and even higher. The duration of such a case is usually from one to three days.

Dysentery is an inflammation of the mucous membrane of the lowel bowel (large intestine) accompanied by patches of ulceration. It is characterized by tenesmus, mucous and bloody stools, burning pain and more or less constitutional disturbances. It occurs in endemic and epidemic form; the latter is known as amebic dysentery.

This disease occurs during the season when there is marked change between night and day temperature, viz., late summer and fall. The intense pain, the bloody stools, the emaciation, the intense thirst, all go towards making the picture of this disease, which, at best, is grave in its prospects. The treatment and management of gastrointestinal diseases of children involves first prophylaxis, which includes hygienic care and dietetic restriction. Broadly speaking, the first two years of a child's life from the foundation for the future of that individual.

Properly regulated infancy and childhood means much toward establishing normal functions of all organs, and especially does this apply to the gastrointestinal tract. It is of the first importance then to see that nutrition is maintained normally by a wholesome and fitting diet. The details of nursing at regular intervals, clean breasts, clean bottles, clean food and clean babies are essential elements requiring intelligent oversights of the physician.

Boric acid solution should be used for cleaning the breasts before and after nursing.

Infants and children require fresh air, and convalescence will be promoted by plenty of pure air and prophylaxis insured if over-crowding is overcome. The first medical treatment is directed towards flushing the bowels, by the use of calomel, 1-10 grain doses every fifteen minutes until 1 grain is given, this to be followed by a small dose of sulphate of magnesia or tasteless castor oil. Intestinal antiseptics, such as the sulphocarbolates, are now indicated, or copper arsenite, which is an astringent antiseptic is beneficial, especially in dysenteric diarrhea. For the pain, opium or some other anodyne mixture may be given.

Turpentine stupes over the abdomen, applied hot, will give relief and quiet the restlessness. For the fever aconite may be used.

Strychnia should be given if there are signs of collapse. The strength of the child must be maintained. Brandy or other alcoholics may be used. The fewer remedies used in the treatment of this disease the better. What is necessary should be done, and to this end treatment should be guided. The essential indications are evacuation of the bowels, the control of fever, thorough intestinal antiseptic treatment, support of the patient and proper diet.

SPLENIC ANEMIA OF INFANCY (PSEUDOLEUKEMIC ANEMIA.)*

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IN the space at my disposal it would be impossible to cover the whole field of primary and secondary anemias in infancy, and therefore I propose to limit this paper to the consideration of one of the most important group of cases —that in which splenic enlargement is a prominent feature. In the great majority of instances cases of anemia with enlarged spleen come under the category of the rather unfortunately named pseudo-leukemic anemia infantum, and in a few only have we to do with true leucocythemia. The former of these conditions therefore merits notice in the first place, and the latter will only be touched on briefly in reference to the question of diagnosis.

No one who is at all familiar with recent work on the diseases of children can fail to be aware of the great amount of literature which has sprung up in connection with the disease described by von Jaksch about thirteen years ago as pseudo-leukemic anemia, and I shall not attempt even to summarize it here. The original account of the disease given by von Jaksch was that it consisted in an enlargement of the spleen and sometimes of the liver, accompanied by a blood change in which the red corpuscles were diminished and the leucocytes increased. This description was modified by Luzet, who found that while the leucocytosis was inconstant, the most striking feature of the anemia was the occurrence of nucleated red corpuscles in very unusual numbers—in greater abundance, indeed, than in the vast bulk of cases of pernicious anemia or any other disease except spleno-medullary leukemia. The majority of observers, especially those who have looked at the disease mostly from the point of view of the hemotologist, have denied to von Jaksch's anemia any claim to be ranked as a separate blood disorder, and have rather regarded it as a secondary anemia which owes the peculiar character of its blood-change to the accident of its occurrence in infancy. The opinion to which I have come after having examined a fairly large number of cases, is that any such examination is inadequate, and that we must place the disease in a niche by itself as one of if not the most important of blood disorders of young infants. Everyone is familiar with the fact that great enlargement of the spleen, apart from any of the causes which produce it in the adult, and, as a rule, though not invariably, associatied with rickets, is a not uncommon condition in young infants. In this connection I cannot do better than quote the words of Dr. Gee, who, so long ago as 1867, said:

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Children in whom we can all but positively deny the existence of syphilis or ague occasionally acquire a greatly enlarged spleen, along with a cachexia which is very profound. We can include leukemia, lymphatic anemia (lymphadenoma), rickets, purpura and primary disease of the liver in the cases referred to; whence it is inferred that children are subject to one or more cachexias not yet defined. . . . For the cases in question the name of simple splenic cachexia is proposed; a condition which seems to be analagous to lymphatic anemia.

In all such cases, even where the anemia is very slight, examination of the blood will show a change of some sort—in a few, where the anemia is profound, a very marked one. It seems to have been upon these very marked cases that the original descriptions of von Jaksch's anemia were based, and it is because of the fact that the blood changes are variable that such different opinions have been arrived at, both as to the characteristic features and to its position as a primary or secondary anemia. I hope to be able to show that all these cases of simple enlargement of the spleen in young infants, arising independently of any necessary antecedent disease unless it be rickets, belong to one clinical group, and that from the blood examination we get both diagnostic information,and also, I think, some help in the prognosis.

The clinical picture is very characteristic. The patients are usually between the ages of 10 and 18 months, the earliest recorded case being an infant of 7½ months and the oldest a child of 3½ years. This, however, is exceptional, and one may put the limits of age roughly at the 6th and 24th months. In one of my cases there is a clear history that the enlarged spleen was noticed when the child was 5 months old, while 2 did not come under observation until the 26th month. As regards the previous history of such cases, the patients were all drawn from a class of the community and from surroundings in which rickets is common, but apart from the ordinary dietetic and hygienic errors which are regarded as predisposing to that disease, I have not been able to detect any special circumstance which seemed to bear on the cause of this condition.

Both sexes are equally liable, and the disease seems not infrequently to occur in more than one member of the same family. This I have thrice seen—once in twins, once where two members of the family suffered, and once where three at least, if not more, had had enlarged spleens in infancy. Senator has also recorded cases of pseudo-leukemic anemia occurring in twins. The onset of the disease is gradual, the child usually coming under treatment because he is not thriving, or because of rickets or some of its complications. The nutrition of the patient is often poor, while the slighter grades of anemia occur in fat and well-nourished infants; in bad cases they are always more or less wasted and sometimes extremely emaciated. As a rule there is evident bloodlessness, the mucous membranes being blanched; in bad cases, as in other forms of anemia, the complexion has a waxy or faintly olive tint, but there is no coloration specially distinctive of splenic enlargement. Hemorrhages from mucous membranes, or into the skin, are not uncommon, but are seldom prominent symptoms. I shall refer to these later.

Jaundice was thrice seen, twice as a passing attack and once towards the end of a fatal case. In nearly all instances the children suffer from rickets, but in one case, that disease could be absolutely excluded, while in one other it was extremely doubtful. As a rule, however, it is well marked, and one point of some interest is the comparative frequency of frontal and parietal bossing in such cases. On examining the abdomen the enlarged spleen is readily detected. It commonly reaches the level of the umbilicus but may fill more than half of the abdomen. Slighter degrees of splenic enlargement are not attended by the distinctive blood changes. The liver may or may not be larger than normal. Its lower border sometimes reaches the umbilicus but as a rule lies two fingers' breadth below the costal margin. I have not seen any decided glandular enlargement in such cases, although sometimes, especially in emaciated infants, the inguinal glands have seemed unduly swollen. There is not any tenderness over the bones. There is often a venous bruit in the neck, and sometimes functional cardiac murmurs are present. Edema is rare, and ascites does not occur. Apart from these symptoms there is nothing specially characteristic. In some cases there is albuminuria, and in one albumosuria (probably from breaking down of the excessive number of leucocytes present) was found. The children are usually listless and fretful, diarrhea and vomiting are common, and there is often some bronchitis. Bronchopneumonia is the most frequent cause of death— indeed the sole one in three out of four fatal cases I have seen. The temperature is often a little raised, in most cases apparently on account of some complication.

Before proceeding to describe the changes in the blood I may refer to some details of the cases tabulated. They are as far as possible arranged in order of severity, the later ones being the less marked. It will be noticed that the age of the patients does not in any way influence the blood changes. Cases 4 and 5 were rachitic twins; Cases 1 and 19 were brother and sister, the latter being brought to the hospital because the mother noticed a swelling in the girl's side, and thought that she was beginning to suffer from the same disease as the elder child. On examination the spleen was found to be about two and a half finger-breadths below the costal margin. It was much smaller therefore than in any of the other cases, but I have included it because this is the only case in which I have seen the condition at its commencement. In Case 15 several other members of the family were said to have had enlarged spleens, but I had no opportunity of examining them personally. Cases 4, 6 and 16 suffered from jaundice. Cases 3, 7 and 10 are known to have recovered completely. The second examination of case 10 was made when the spleen was so much diminished as to be just palpable; the blood-count closely resembles that of case 18 (a slight one) and Case 19 (an early one). Cases 4, 5, 12 and 16 were fatal from bronchopneumonia with the addition in the last of acute jaundice due to hepatitis of unknown origin. Cases 1, 8, 11, 13 and 19 are still under treatment.

Blood Changes.—The results of an examination of the blood in a series of patients are shown in Table I. In a fairly well marked case the red corpuscles numbered from 2,000,000 to 3,000,000. The lowest count among my cases is 1,146,000;

TABLE I.

No. of Case.	Sex.	Age in Months.	Date.	Red Corpuscles.	Hemoglobin.	Leucocytes.	Color Index.	Ratio of Whites to Reds.	Percentages of—				Nucleated Reds. per c.cm.
									Lymphocytes.	Polymorpho-nuclear.	Eosinophiles.	Myelocytes.	
1	M	26	February 28	1,146,000	20	8,600	0.8	1 to 131	50.0	46.2	1.6	2.2	1,376
			March 22	1,540,000	25	8,900	0.8	1 to 175	59.6	34.8	1.0	4.6	567
			April 27	1,903,000	32	8,125	0.8	1 to 238	57.0	37.0	0.2	5.8	1,100
			May 26	1,525,000	..	10,000	..	1 to 140	59.6	28.7	1.8	10.0	544
			June 16	2,075,000	..	5,900	..	1 to 351	69.0	28.0	0.8	2.2	371
			——	2,200,000	30	12,000	0.7	1 to 183	66.0	31.4	0.8	1.0	576
2	M	11	——	2,360,000	28	14,000	0.6	1 to 183	68.0	28.8	2.0	9.4	175
3	F	16	February 11	1,156,000	..	32,500	..	1 to 51	...	....	...	...	....
4	F	11	February 23	2,040,000	27	25,700	0.6	1 to 79	49.0	49.0	0.4	1.6	2,313
			March 2	2,920,000	30	23,200	0.5	1 to 125	....	....	...	...	....
			March 10	2,660,000	30	18,400	0.6	1 to 144	61.5	32.5	3.0	3.0	1,300
			April 4	2,800,000	18	45,000	0.3	1 to 62	....	....	...	...	....
			February 17	2,640,000	..	35,200	..	....	....	....	...	...	....
5	F	11	February 25	3,160,000	27	27,700	0.4	1 to 114	62.0	34.0	0.2	3.0	1,600
			March 1	3,180.000	30	20,000	0.5	1 to 159	....	....	...	...	....
			March 9	2,600,000	35	22,900	0.6	1 to 112	69.0	26.2	0.8	4.0	2,770
			September 25	2,600,000	..	22,600	..	1 to 115	67.2	30.4	0.4	2.0	790
6	M	16	October 2	2,900,000	..	21,600	..	1 to 134	64.0	33.0	...	3.0	720
			June 30	2,500,000	..	40,000	..	1 to 62	....	....	...	...	....
7	M	16	November 26	3,537,000	..	16,300	..	1 to 216	56.0	35.0	7.0	2.0	1,533
			December 1	4,000,000	60	21,800	0.7	1 to 181	....	....	...	...	....
			December 12	3,650,000	60	21,800	0.8	1 to 166	52.0	37.2	7.4	2.4	1,090
			December 29	4,200,000	68	17,500	0.7	1 to 240	....	....	...	...	....
			March 3	4.940,000	72	12,600	0.8	1 to 383	58.0	37.0	4.0	1.0	Few
8	M	13	August 8	2,800,000	36	9,800	0.6	1 to 286	70.2	25.5	0.3	3.5	466
			November 11	3,250,000	38	12,000	0.6	1 to 290	65.0	30.6	0.4	4.0	570
			Jauuary 8	4,800,000	..	10,100	..	1 to 406	56.0	42.4	1.0	0.6	126
			February 13	4,216,000	58	9,800	0.7	1 to 430	....	....	...	...	....
			March 24	3,880,000	..	11,000	..	1 to 352	....	....	...	...	....
			June 24	3,510,000	58	6,300	0.8	1 to 557	52.6	42.4	0.4	4.6	327
9	M	24	——	2,370,000	..	5,800	..	1 to 408	47.2	51.0	0.8	1.0	150
10	F	10	March 27	3,100,000	45	17,000	0.7	1 to 182	63.0	35.8	0.5	1.0	1,700
			January 15	4,800,000	70	10,000	0.8	1 to 475	51.2	48.0	0.8	...	40
11	F	11	——	3,452,000	35	23,900	0.5	1 to 144	38.0	59.0	1.2	1.8	1,300
12	M	18	——	5,800,000	46	35.200	0.6	1 to 108	38.3	59.0	0.2	2.5	905
13	F	15	May 30	3,960,000	57	27,000	0.7	1 to 146	65.0	30.0	0.5	4.5	964
			June 16	3,410,000	47	19,600	0.6	1 to 174	58.8	38.0	1.0	2.4	1,460
14	M	15	——	4,000,000	66	19,600	0.8	1 to 200	54.6	44.2	0.6	0.6	138
15	F	26	——	4,000,000	..	12,000	..	1 to 333	56.0	34.0	2.0	8.0	1,340
16	F	21	——	4,100,000	50	12.800	0.6	1 to 320	61.0	36.5	1.5	1.0	20
17	F	13	——	4,160,000	60	11,860	0.7	1 to 330	61.2	36.2	1.4	0.8	512
18	F	18	——	4,900,000	80	10,500	0.8	1 to 446	55.8	43.8	0.4	...	30
19	F	18	——	4,940,000	65	10,266	0.6	1 to 460	62.8	35.4	1.6	0.2	20
20	M	13	——	5,020,000	70	15,300	0.7	1 to 330	57.0	40.0	2.0	1.0	612
									59.1	36.0	1.2	2.8	

the highest just over 5,000,000—a normal figure. The color index is always low, the average being about 0.6 and the limits within which it varies 0.3 to 0.8. The latter figure may occur even with pretty severe anemia, as well as in slight and convalescent cases, and cannot be regarded at far from the normal in children. It must also be remembered that the lower readings of the Gower's hemoglobinometer are not very accurate. The highest leucocyte count among my cases was 45.000, the lowest 5,000. From 16,000 to 25,000 is perhaps the commonest figure. The ratio of whites to reds varied from 1 :31 to 1 : 557, the latter being about the normal proportion. As a rule the leucocytosis corresponds roughly with the degree of the anemia, but there are well marked exceptions to this rule, as seen by comparing Case 1 with Case 4 and Case 11, in which, with approximately the same diminution in the reds, the leucocyte counts differ greatly. Leucocytosis therefore though an important feature is not a constant one.

Changes in the Red Corpuscles.—Even when there is considerable anemia there is not much alteration in the shapes of the erythrocytes, and a marked degree of poikilocytosis is not seen in the disease under consideration, although it does occur in other forms of infantile anemia. As a rule, however, there is a great deal of variation in the sizes af the corpuscles, and megalocytes are common, as indeed, we might expect, knowing as we do, that normally the size of the red cells is less constant in infancy than in later life. Some polychromasia of the erythrocytes is frequently met with. The most striking feature, however, is the presence of nucleated red blood corpuscles. These are usually present in considerable numbers, as many as 2,770 per c.mm. having been found in one case, though from 500 to 1,000 is perhaps an average number. These cells, too, present certain peculiarities as regards their nuclei, which are often branching, double, trefoil, or otherwise irregular in shape, while mitotic figures are not uncommon. In most cases megoblasts are also found; sometimes they form as many as a quarter of the erythroblasts present, and they display the same nuclear changes as do the normoblasts. They were present in 13 of the 20 cases tabulated. While these nucleated reds are more common in bad cases no constant relationship exists between their number and the diminution of the red corpuscles as is seen if Cases 2 and 3 be compared with Cases 4 and 5 and Case 13 with Case 14. They do not moreover bear any relationship to the leucocytosis, and they are not apparently more likely to occur in young children than in older ones, but, on the contrary, are as numerous in the two older cases (1 and 15) as in the four youngest (2, 4, 5 and 10). My impression is that the larger the spleen is the more abundant they are likely to be. In all the cases in which their number runs into four figures, with the exception of 10, the organ was enormously hypertrophied. What I have said of the erythroblasts as a whole also applies to the megaloblasts in particular, a point which is of importance when one considers how grave their significance is in adult life.

Leucocytes.—The chief features of these may be mentioned under three heads:

1. Lymphocytes.
2. The polymorphous character of the cells present.
3. The almost constant occurrence of a small percentage of myelocytes.

In Table II the average differential count of the cases of pseudo-leukemic anemia (excluding Case 12, in which a pneumonic leucocytosis was present) is compared with that of 12 others taken at random, some of which were normal and some anemic or otherwise ailing, and from this comparison we see that in the former there is a considerably higher percentage of lymphocytes and a correspondingly lower percentage of polymorphonuclear cells than in other conditions. The polymorphous character of the leucocytosis is given by the presence of an abnormally large number of cells intermediate in form between the small lymphocyte and the polymorphonuclear leucocyte—large lymphocytes or hyaline cells and transitional forms as they are called. In some cases these large lymphocytes

TABLE II.

	Lymphocytes.	Polymorphonuclears.	Eosinophiles.	Myelocites.
Average differential counts of leucocytes in nineteen cases of splenic anemia	59.1	36.0	1.2	2.2
Twelve cases of various diseases	47.4	50.4	2.2	...

equalled or actually preponderated over the smaller ones. This polymorphism makes differential counting difficult, and I have generally been content to classify all non-granular cells with round or slightly irregular nuclei as lymphocytes. Table III

TABLE III.

	Total Lymphocytes.	Small.	Large.	Transitional.
Average differential counts of lymphocytes in sixteen cases of splenic anemia	59.3	26.0	21.0	12.3
Five cases of various diseases	48.5	39.2	8.0	1.3

however, shows a comparison between 16 cases of the pseudoleukemic anemia and 5 other cases in which the proportions of these different cells was determined, and from this the great excess of the large lymphocytes and transitional cells in the former condition is clearly evident. The eosinophile cells present no peculiarity; they vary greatly in number, but only once have I seen eosinophiles to the extent of 7 per cent. The polymorphonuclear leucocytes call for little remark, save that in some cases many of them are much larger than normal, and have a less complex nucleus and a sparser granulation, approximating, that is, to the transitional cells and myelocytes. These last are almost invariably present; they were absent from only two specimens—one from a slight case and one from a convalescent patient in whom they had previously been found. Not infrequently a good number were about the diameter of a polymorphonuclear, or less—the small myelocytes of Cabot. They varied in number from 0.2 to to 10 per cent., the average being 2.8.

To summarize the above:

1. The erythrocytes are diminished to a million and a half or less; they are altered in size rather than in shape, the color index being low, especially in bad cases.

2. Normoblasts are invariably, and megoblasts frequently, present; some have irregular or mitotic nuclei. They occur even when the anemia is comparatively slight; possibly this may be due to their persistence during convalescence.

3. The leucocytes may reach 50,000 or more; their number bears a general but not a constant relation to the amount of anemia. Lymphocytosis is always present, whether the total leucocyte count be increased or not, and the distinctive features of the white cells is the appearance of large mononuclear and transitional forms, rather than the occurrence of abnormal cells. Great variations in the number of the leucocytes occur, not only in different cases, but at different stages of the same case.

4. Between well marked cases and a normal or almost normal appearance a whole series of intermediate grades may be found.

Prognosis.—Of the cases tabulated, 4 or probably 5 died; 3 are known to have recovered completely, 5 are still under treatment, and the subsequent course of the rest is unknown, but most of them appeared to be convalescent when last seen. A spleen filling half the abdomen may become imperceptible in a year or less, and the anemia is often to a great extent recovered from before the tumor vanishes. On the other hand, the condition may remain almost stationary for long periods. This is seen in Cases 1, 7 and 8, in two of which the enlarged spleen and anemia have remained without much change for nearly a year. Hemorrhages, particularly when cutaneous, are of bad import. Small petechiæ alone occurred in Cases 4, 5 and 12, all of which proved fatal. In Case 1 there was recurrent epistaxis; in Case 7 hemorrhagic conjunctivitis and in Case 8 slight epistaxis and petechiæ. Of these only the second recovered, the two others are still under treatment, with very partial success. Three of the five fatal cases occurred in childdren under one year. Some aid in the prognosis may, I think, be gleaned from the following considerations:

1. The age and general nutrition of the patient, the severity of the rickets and the presence or absence of complications are perhaps the most important guide.

2. A great diminution of the red cells and particularly of their color index, is a much more unfavorable sign than any qualitative alteration of the corpuscles.

3. A high leucocyte count is unfavorable, especially when there is a large percentage of transitional forms.

4. Petechial hemorrhages are a bad sign.

5. Progressive increase in the polymorphonuclear cells generally goes along with improvement in the condition.

6. No prognostic importance can be attached to the number of erythroblasts, or to the presence of a limited number of myelocytes.

7. The prospect of recovery is not materially influenced by the size of the spleen.

Morbid Anatomy.—Three of the cases were investigated post-mortem, but the results of the microscopical examination do not throw mnch light on the nature of the disease.

Spleen.—In Case 16 the organ was markedly congested, but the Malpighian bodies were indistinct. There was a considerable excess of eosinophile cells in the pulp sinuses. In Case 12 the spleen was anemic, the Malpighian bodies were somewhat indistinct, and there was an even more marked eosinophilia than in the last specimen. In Case 5 the splenic pulp was much hypertrophied and the Malpighian bodies correspondingly obscured; the condition, indeed, was not unlike that which is met with in myelemia. In this case there was no eosinophilia.

Liver.—In all three cases special search was made but without success, for the hemopoietic cells described by Luzet as occurring in these cases. In Case 5 the organ was practically normal, and in Case 12 the only noteworthy feature was the almost complete absence of polymorphonuclear cells from the hepatic capillaries—a fact which is probably related to the polymorphonuclear leucocytosis associated with the pneumonia which was the cause of the patient's death. In Case 6 hepatitis was present to which the fatal jaundice must have been due. Bone marrow: This was unfortunately satisfactorily examined in one case only; it appeared to be normal.

Diagnosis.—Apart from the wider question of whether one is justified in grouping all these cases together, or whether they may not possibly include more than one condition, I wish to refer briefly to the question of their differential diagnosis from leucocythemia. While the lymphatic type of that disease occurs in very young children and is easily recognizable, the mixed type is extremely rare, and no indisputable case has ever, I think, been recorded in a child under 2 years. Morse* describes what was probably a case of this disease, and I have seen one resembling his very closely. The patient was a girl, aged 16 months, slightly rachitic; the spleen was enormously hypertrophied. The examinations of the blood are given in Table IV.

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* Boston Medical and Surgical Journal, 1894.

TABLE IV.

	Red corpuscles.	Leucocytes.	Lymphocytes.	Polymorphonuclears.	Eosinophiles.	Myelocytes.	Nucleated reds, per c.mm.
1.—Morse,s case....................	2.900,000	48,000	31.5	46.5	0.6	21.4	....
2.—Writer's case....................	3,000,000	49,000	37.5	58.0	1.0	11.5	4,800
	3,510,000	53,000	39.0	50.0	...	11.0	7,800
	3,041,000	24,200	30.0	56.0	0.5	13.5	2,800

My reasons for supposing this to be a case of leukemia and not one of von Jaksch's anemia, are the high percentage of myelocytes, the great number of normoblasts and the absence of megaloblasts, the low lymphocyte count, and the fact that the child, notwithstanding the comparatively large number of erythrocytes, was much more seriously ill than in von Jaksch's anemia. There was in addition a very great tendency to hemorrhage, ordinary percussion of the skin causing large bruises —a phenomenon which is common in leukemia, but which I have not seen in the other disease.

Nature of the Disease.—As to this very little is known. So far as can be judged from the reports of cases the name pseudo-leukemic anemia has been restricted to severe cases, while the less marked ones have been simply recorded as splenic enlargement. If I am right in supposing that the first four or five cases in the table correspond with pseudo-leukemic anemia, then I think it must be conceded that it is impossible to draw any hard-and-fast line between them and the slighter ones, and that, in fact, the whole fall into one clinical group. From this point of view the name must be regarded as an unfortunate one, and one would prefer some title which would emphasize the anemia less and the splenic enlargement more, perhaps splenic anemia of infancy would be as good as any. If we take the clinical condition as a whole we may regard it as having certain analogies with chlorosis; both are diseases practically limited to a particular epoch of life, in neither is any definite cause known, and in both while severe cases show a characteristic blood change, slighter and convalescent cases pass invisibly into a normal condition. Assuming the clinical unity of the disease, one must admit that both its cause and the relationship between the splenic enlargement and the anemia remain obscure. There is no doubt that rickets is by far the most common antecedent, but the fact that genuine cases do occur apart from that disease, removes the splenic cachexia from the position of a mere symptom of rickets. But while rickets cannot be the sole cause of the disease, it is certainly the most important predisposing factor known, and it is noteworthy that in all cases where more than one member of a family was affected rickets also was present. Perhaps one may gain a hint as to the etiology from the fact that in bad cases there is always wasting, and that in rickets splenic enlargement and anemia seem uncommon if the nutrition is not interfered with. Both of the cases which were not rachitic were emaciated; one was a breast-fed child of 13 months, the other, aged 16 months, had been fed on patent foods. As to the relation of the enlarged spleen to the anemia there seems no doubt that the former precedes the latter, since one never finds the blood changes I have described above apart from splenic enlargement. The latter is the one constant feature of the disease, and the greater it is the more likely is the anemia to be profound.

Treatment.—This unfortunately is not very satisfactory. Iron, arsenic and other hematinic drugs have not proved of use in the condition, and one has therefore only to rely on general hygienic measures, and in particular on the treatment directed against rickets.

CONCLUSIONS.

1. Enlarged spleen, often associated with anemia, is not uncommon among young children. In bad cases the blood is very much altered, while in the slighter ones there may be little change.

2. The change in the blood differs from that in any other disease, and is characterized by (*a*) lymphocytosis, due to the occurrence of numerous transitional and probably immature mononuclear cells, and (*b*) the presence of erythroblasts, often in numbers out of all proportions to the diminution of the red corpuscles.

3. The name pseudo-leukemic anemia has been given to the more severe cases, but to draw any hard-and-fast line between these and slighter ones, or, indeed, to introduce further subdivisions based on any particular blood change, is entirely arbitrary.

4. Since the splenic enlargement is more constant than any single change in the blood, and since both arise independently of any other disease, it is not justifiable to regard these as cases of secondary anemia.

5. The clinical features of the condition are sufficiently definite to warrant this being looked upon as a primary disease, to which the name splenic anemia of infancy may be given.

In conclusion, I have only to thank Dr. Lovell Gulland for much help in examining the organs of the fatal cases. The sections were prepared for me in the laboratory of the Royal College of Physicians of Edinburgh.

Medical Department, University of Virginia, Charlottesville, Va.

The medical department of this university has had a very successful and honorable career. A statement of the success of the graduates before the Navy Examining Board is interesting. During 1891 there were 52 applicants before the examining Board of the Medical Department of the United States Navy; of these, 19 were accepted, and of these successful ones the University of Virginia had 7 of a total of 8 applying—that is, all the rest of the world had 12 successes out of 44 applicants, while the university had 7 successful candidates out of 8 applicants.—*Virginia Med. Semi-Monthly.*

Compulsory Vaccination for School Children.

The Montreal Health Department has sent a circular to all directors and managers of colleges, private and public schools, and convents, stating that they must insist on receiving a certificate of successful vaccination from each child before it is allowed to attend the sessions. Prompt prosecution in the recorder's court is threatened for every violation of the law.—*The Medical Fortnightly.*

"NASOPHARYNGEAL DISEASE AND ENLARGED CERVICAL GLANDS."

F. Huber, M.D.,
New York.

IN the opening discussion on the "The Value of Physical Exercise of the Respiratory Tract" (British Medical Association, Aug. 1st, 1902, Mr. Arbuthnot Lane spoke of the structure of the nasopharynx, and of the origin and growth of adenoids, showing how these not only interfere with respiration, but were responsible for many secondary disorders. They are connected, for example, with some of the glands of the neck which are liable to become inflamed and enlarged, and thus form an excellent culture ground for the growth of the tubercle bacilli.

Jacobi (*Phila. Med. Jour.*, Dec. 10, 17, 24, 1898) writes: Nasal catarrh, with its hyperemia and soreness of the mucous membrane predisposes and causes chronic hypertrophy, adenoid growths, tumefaction of submental and submaxillary lymph bodies, invasion of diphtheria and tuberculosis and occasionally meningitis.

Though the relation of cause and effect is well established in practice the connection is frequently overlooked or is lost sight of by the practitioner and general surgeon—if we may judge from instances coming under observation, particularly in dispensary service. External applications of all sorts are used over the enlarged glands of the nerves to the neglect of the toilette of the nasopharynx.

Not infrequently among children seen at the Vanderbilt Clinic, we have found patients who had been operated upon for tubercular glands of the cervical region, in whom, however, no attention had been paid to the original site of the infection in the ear or nasopharynx. Many of the cases had been operated upon in large hospitals by men of reputation. This is certainly a serious oversight.

A few years since, in an article which appeared in the "Jacobi Fetschrift," the writer directed attention to the subject in the following remarks:

"Small, painless glands at the angle of the jaw, about the size of an almond, are common. Though frequently mistaken for tonsils, this is an error. They are due to infection from the nasopharynx and point to the presence of adenoids or a moderate degree of nasal catarrh. If an exacerbation of the latter takes place, or an infectious disease is superadded, the glands begin to swell and become more or less painful. Under appropriate treatment with nasal injections and cold applications externally, the process subsides and resolution takes place. In other instances suppuration occurs—either glandular, periglandular, or both. Now and then the capsule becomes thickened and the process becomes quiscent; sometimes caseation takes place or calcoreous or fibroid degeneration occurs. Other chains may be involved, the proceess extending downward to the bronchial glands- The chief danger, however, lies in the tendency to become tubercular. In the latter case, the process may remain local, infect other glands and tissues in the vicinity, or general tuberculosis may result eventually.

Surgeons, recognizing the danger, advocate and practice the removal of enlarged or tubercular cervical glands. Yet adenoids and large tonsils have been allowed to remain, to serve as a nidus for subsequent infection. They, as well as the external glands, ought to receive surgical treatment."

More recent, Roswell Park, in an article entitled, "The Advantage of Early Surgical Intervention in Border Land Cases," writes:

"A very frequent condition of the neck in which delay is too often counseled, is that of tuberculosis of the cervical lymph nodes, whether moderate or extreme in degree. Here months and years are often wasted in futile administration of cod-liver oil or of vaunted specifics, when, although the conspicuous lesion is in the lymph-nodes, the trouble has really originated in the tonsils. in the nasopharynx, or in the teeth. The first thing to be done with these cases, obviously, is to remove the source and origin of infection. This may be to remove post-nasal adenoids or the tonsils, or to send the patient to a competent dentist. The source of infection being thus removed, there is then some opportunity for specific drugs to exert their expected or desired effect, or there is then a fair opportunity for the surgeon who may see fit to enucleare the diseases' pasts and this he will certainly prefer to do, if possible, before secondary infection shall have produced infiltration of and adhesion to all the surrounding structures. It would appear then, that primary treatment of cervical tuberculosis must begin usually in the oro- or nasopharynx."

It must be conceded that a non-specific adenitis of the neck is frequently found. As a concomitant of disease of the nasopharynx, at first simple, if resolution does not take place subsequently, tubercular infiltration may take place. On the other hand, the existence of hyperplasia of the lymphoid tissue of the nasopharynx certainly favors the development of a tuberculosis, for it is doubtful whether the tubercle bacillus can flourish in perfectly healthy tissues. This chronic hyperplasia may aptly be regarded as a preparation of the soil whereon the seed of tuberculosis may grow and flourish.

To judge from the researches of numerous authorities, we are in a position to endorse Stegman's assertion: "Tuberculosis of the cervical lymphatics is usually the first localization of this disease within the body, because these glands are commonly the first walls of defense against the invasion of the tubercle bacilli, which reach them from the inspired air in the mouth and pharynx, whence they are taken to the glands by the small lymphatic vessels." So much for the clinical aspect of the subject.

Bacteriological investigators have confirmed the observations of clinicians. It may therefore appear to be a work of supererogation to discuss the question were it not that in practice we find the relationship between large cervical glands and nasopharyngeal disease overlooked so frequently.

Of the more recent literature, the article by Lartigau and Nicoll is particularly valuable and instructive. The authors record their painstaking endeavors to ascertain the frequency of tuberculosis of the pharyngeal tonsil, based upon 75 consecutive specimens of adenoids tested for the tubercle bacilli. The question is discussed in a scientific and thorough manner and the following conclusions are of much interest to us as clinicians:

1. Primary tuberculosis of adenoids is probably more common than most previous studies show. Sixteen per cent. of our series contained tubercle bacilli, 10 per cent. with characteristic lesions of tuberculosis. The tubercle bacilli were present in small numbers.

2. The lesions in primary tuberculosis of the adenoid are generally close to the epithelial surface and fecal in character. Occasionally they may be found in the deeper parts of the pharyngeal lymphoid tissue.

3. The pharyngeal tonsil may be a portal of entry for the tubercle bacillus and other microörganisms in localized or general infections.

A fair proportion of the specimens examined by Lartigau and Nicoll were derived from the children's clinic. These patients had been examined by the writer before operation and in all of them the glands at the angle of the jaw were more or less enlarged. After the tonsils had been removed, the nasopharynx curetted and the usual nasal toilette employed, the chronic glandular induration disappeared, no external applications were employed in any of the cases.

It is a trite remark that there is more danger in a dirty nose than in an unwashed face. The nose and throat should be kept scrupulously clean. Nasal catarrh should not be neglected, nor should large tonsils and lymphoid hypertrophies be allowed to remain to serve as a nidus for subsequent infection of the cervical lymph nodes (pyococcal or tubercular). On the other hand, large cervical lymph nodes must not be looked upon as a primary condition and treated as such; the original site of the trouble is situated in the oro- or nasopharynx.

It is not necessary to quote numerous authorities in confirmation. Observers are agreed that hyperplasia of the pharyngeal lymphoid tissues is very commonly associated with enlargement of the lymph-nodes, the infection comes from the nose, throat and mouth, it does not ascend from the mediastinum as a general rule. Hygienic measures are not to be neglected; fresh air, cold sponging with friction of the body in general, and syr. fer. iodid are indicated, together with good food, milk, cream, eggs, etc. The bodily functions must not be neglected. Sir Andrew Clarke has taught us that constipation is often an active factor in anemia, which is at the basis of the constitutional condition permitting the invasion of the tubercle bacilli.

A great deal can be done in the way of prevention.* Preventive medicine has accomplished much in relieving human suffering. Efforts in this direction have already borne fruit, and as a knowledge of etiology increases, advance in prophylaxis will keep pace. This is eminently true of the condition discussed above.

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* Time and again, in the service of Professor Jacobi at the Vanderbilt Clinic, we have seen large glands disappear, no external treatment being employed, attention being directed solely to the naso- and oropharynx.

SOCIETY REPORTS

PHILADELPHIA PEDIATRIC SOCIETY.

Stated Meeting, October 13, 1902.

The President, Dr. SAMUEL McC. HAMILL, in the Chair.

Dr. EDSALL reported a case of **tubercular meningitis without fecal symptoms**, which occurred in a boy about 10 years of age, admitted to his service at St. Christopher's Hospital for Children. The history (which after the child's death was proved to have been incorrect) stated that the child had, four or five days before, been taken suddenly ill with stupor, which was very soon followed by coma. No other facts could be obtained.

When admitted the boy was in moderately deep coma, was constantly having tetaniform convulsions, and had a temperature of 104° F. No foci of tuberculosis could be discovered. The urine was normal. By lumbar puncture about 10 cc. of fluid was obtained; this was clear; no fibrin thread formed on standing, and no tubercle bacilli could be found after centrifugation; there was, however, a moderate number of mononuclear cells in the fluid. The child showed no ocular paralysis except partial paralytic dilatation of the pupils; other paralyses were absent. Kernig's sign was absent, and there was no retraction of the head or rigidity of the neck. The boy had a moderate degree of hydrocephalus.

The diagnosis made was tubercular meningitis, although there was serious consideration of acute internal hydrocephalus of the toxic variety. The child died three days after admission and an acute miliary tuberculosis was found, originating from a small focus in the upper lobe of the left lung. There was tubercular meningitis. So far as could be determined macroscopically this was confined to the anterior half of the medulla, the pons and the immediately adjacent parts of the crura and cerebrum. There was an old hydrocephalus with marked thickening of the appendyma and dilatation of all the ventricles, the foramina of communication between the fourth ventricle and the external cerebrospinal space being closed.

The absence of rigidity of the neck was one of the frequent examples of the fact that this system is a very irregular one in tubercular meningitis, while the absence of Kernig's sign is further testimony this is extremely inconstant in that disease, and it is apparently a sign upon which too much stress has been laid. Although usually present in non-tubercular meningitis, it is frequently absent in tubercular meningitis, and is occasionally present in other conditions resembling meningitis.

Dr. Edsall also noted a case in an adult in which a unilateral Kernig's sign occurred in cerebral syphilis with hemiplegia, the latter probably being due to thrombosis.

The difficulty in the diagnosis between meningitis and acute toxic internal hydrocephalus in such cases was referred to, as well as the occasional difficulty in distinguishing between tubercular meningitis and septicemia; and a case was mentioned in which the diagnosis of meningitis was made by several distinguished clinicians, but which proded to be a streptococcus septicemia, set up by a small patch of pseudomembranbranous streptococcic infection of the uterus in a puerperal woman.

Dr. J. P. Crozier Griffith said that he was constantly being more impressed with the irregularity of the symptoms of tubercular meningitis. In his experience great retraction of the head was undoubtedly absent in the majority of cases. The neck is, however, generally more or less rigid, although this is not perhaps discovered until an effort is made to flex it. One sees all varieties of cases of tubercular meningitis. One of the most extreme instances of retraction of the head with opisthotonous in Dr. Griffith's experience was a case of tubercular meningitis which for some time resembled tetanus very closely. In fact the diagnosis had been in doubt until a lumbar puncture proved the presence of tubercle bacilli.

Drs. A. H. Davisson and D. J. McCarthy reported the post-mortem conditions in a case of **paraplegia** previously exhibited to the Society.

There was at birth a complete flaccid motor paralysis from the chest down. Sensation was lost up to the level of the second dorsal spinal segment. There was incontinence of urine and also constipation, remedied by enemata. The diagnosis at that time favored hemorrhage into the spinal cord at the second lumbar segment. At autopsy there was a complete collapse of the cord from the second to the tenth dorsal segment. The cervical and lumbar enlargements were both normal on gross examination and contained ganglion cells in the usual position and number. The dorsal collapsed cord, which was perfectly flat, contained no ganglion cells—merely a detritus of degenerated nerve material and free blood. A complete examination as to the cause of the hemorrhagic degeneration could not be carried out, on account of the accidental partial hardening of the cord while it was being photographed.

Dr. Eshner asked whether there was any evidence of hemorrhage into other organs than the spinal cord. The description of the lesions had made him think that hemorrhage resulted from traction during the birth of the child and a ready explanation of the condition. He recalled cases that had been recorded in which difficulty in parturition had resulted in hemorrhage in many organs. Had such hemorrhage been found in this case the probaility that the traction had been the actual cause of the condition would have been increased.

Dr. Westcott read a brief note, offering a suggestion for securing greater clearness in the designation of **milk-dilutions.** Such expressions as "diluted one-half," "diluted one-third," "a dilution of one, to two, or three," "twice diluted," or "thrice diluted," are equivocal; or at least indirect, even if understood by all in the same sense. Our methods of infant feeding deal almost entirely with dilutions of milk and often demand a ready mental calculation of percentage proportions in which the important factors are the quantity of milk or cream and the total quantity of mixture. The latter quantity is the sum of milk or cream plus diluent. The quantity of the latter is, however, an important part of the mixture, taking the place of "q.s." in an ordinary drug prescription. Perfect clearness is secured if the quantities of milk and total mixture alone are referred to; and thus by the use of the proposition "in," the fraction of dilution is at once shown. We may, therefore, speak of a dilution of milk "one in three,' in such the percentages of milk solids are at once indicated to be one-third of those of the milk used. "Two in five" indicates two parts of milk and three of water, or five of mixture; and the fraction "two-fifths" at once indicates the percentage formula. By the adoption of this plan of referring to milk solutions perfect clearness of expression and directness of mental calculation can be secured.

Dr. Hand agreed with Dr. Westcott as to the importance of this subject. He said that he had often noticed, in conversing with doctors, the indefiniteness of their statements with regard to infant feeding. He had often heard the report, "This child did well (or badly) on laboratory milk or on peptogenic milk powder," which, of course, conveys nothing as to what strength of nourishment the child was then really receiving.

Dr. Hamill said that in papers concerning infant feeding he had constantly met with the difficulty referred to by Dr. Westcott and that he had often found it hard to understand what the writer meant by the expression he used. Dr. Hamill believed that Dr. Westcott's suggestion would be an extremely useful one and would lead to much greater clearness in the writings concerning infant feeding.

Dr. J. H. McKee exhibited a specimen of **cerebellar tumor** in an infant of 21 months. The conditions had not been suspected during life, and the ante-mortem diagnosis was marasmus and meningitis. A critical review of the case in retrospect revealed that there had been cephalagia, insomnia, change in disposition and vertigo, and that the convulsions had been unilateral. The autopsy revealed a tuberculous bronchopneumia, recent pleural adhesions, cheesy bronchial lymph-nodes, enlarged mesenteric glands, giant tubercles in the liver and a large tyroma of the right cerebellar hemisphere and meninges.

Case 2.—A specimen was shown from a patient that had suffered from congenital cardiac disease, in whose case a diagnosis had been made during life of pulmonary stenosis, deficient septum ventriculorum and patulous ductus arteriosus. The necropsy showed, in addition to the conditions diagnosed, a slightly patulous foramen ovale and an adventitous communication between the right ventricle and the aorta.

Case 3.—Intubation at a very early age. The case was one of great obscurity, revealing only edema of the lungs at autopsy. It was thought to be one of infanticide, as there were superficial abrasions upon the neck. The symptoms were those of pressure upon the upper air passages. For the relief of this, intubation was done when the baby was less than 24 hours old. For about 18 hours the dyspnea was much relieved but the infant then died suddenly.

Case 4. A probable case of duedenal atresia.—The baby was a premature infant, aged 3 days, when, through the courtesy of Dr. Helen Kirschbaum, he was seen. He had vomited since birth and the vomited matter was bile-stained. He had had no stools until given an enema the day before, when some material resembling soap was removed from the bowel. This was evidently inspissated mucus. It did not show any evidence of pressure of the normal biliary pigments. A physical examination revealed only a vertical stomach, and at its lower edge what felt like a thickened cord. Spasmodic stricture of the esophagus was thought of, but the frequency of bilious vomiting rather precluded that diagnosis. The baby was practically moribund and soon died. An autopsy could not be procured.

Scarlatina.

A solution of boric acid is a good throat antiseptic. This may be used as a gargle or a spray, or it may be put up in the form of a lozenge flavored with peppermint or some other agreeable substance, together with sugar, for the use of children.

A solution of permanganate of potassium is one of the most efficient antiseptic nose and throat sprays that can be used in scarlatinal or any other form of sore throat. Its only drawback is that it becomes extremely objectionable to many people after two or three days' use.

One or two per cent. menthol in oil or vaseline will ease the itching of scarlatina if applied to the affected parts at suitable intervals.—*Med. Conncil.*

PRACTICAL NOTES

Treatment of Erysipelas with Diphtheria Antitoxin.

Dr. Zwetæff (*Prac. Vratch*, No. 22, 1902) has employed a hypodermic injection of diphtheria antitoxin in two cases of severe erysipelas of the face with favorable results. He explains this non-specific action of the antitoxic serum by its stimulating action on the phagocyte properties of the cells.—*The Medical News.*

Reduction in Infant Mortality in Large Cities.

The saving of infant life in the large cities is shown by the statistics of New York City, quoted by Dr. L. Emmett Holt, in the second edition of his text-book relative to the diseases of infancy and childhood. There was a steady and marked decrease in the death-rate for the ten years 1891 to 1900 inclusive. In the year 1891 in the city of New York the population under five years of age was 188,103, and the number of deaths 18,224, or a death-rate of 96.6 per thousand. In 1896 the corresponding population numbered 216,728, and the deaths 16,807, or a death-rate of 77.5 per thousand. Similarly in 1900 the population was 233,537, and the deaths 15,638, or a death-rate of 67 per thousand. The actual number of deaths during the ten years was thus decreased by 2,576, while the population under five years of age was increased by 44,234, and the death-rate fell from 96.6 to 67 per thousand.

Holt attributes this splendid result to the "wider diffusion of knowledge in the matter of infant feeding and hygiene; the fact that a larger number of infants than ever before are now sent into the country in summer; that all infants are looked after with greater care during the summer, many agencies being at work to improve their condition. Not least important of these is a bettering of the milk supply and the furnishing of pure milk (gratis) from different centers, together with a general adoption during hot weather of some form of milk sterilization—a practice well-nigh universal in the tenement districts. Antitoxin has reduced the death-rate among older children." Can other large cities show an improvement equally as great? —Editorial, *Amer. Med.*

ABSTRACTS

TUBERCULAR INHERITANCE AND DEAFNESS.

OSTMANN (*Munch. Med. Woch.*, July 22, 1902) has studied 676 children belonging to 385 families, with reference to the association of tubercular inheritance and deafness. Of these children 162 were hard of hearing. Two hundred and forty-two families had 414 children, of whom 17.6 per cent. were hard of hearing. One hundred and forty-three tuberculous families had 262 children, of whom 34 per cent. were hard of hearing. More careful analysis showed that, when the tuberculous inheritance was in the direct ascendance, more children were hard of hearing than when it was in the collateral ascendance, the proportion being 60.5 per cent. to 39.5 per cent. The forms of ear disease were various, the most common cause of deafness being catarrhal inflammation of the middle ear. It therefore seems likely that a tuberculous diathesis promotes the development of ear disease and exercises an unfavorable influence upon its course.—*Philadelphia Med. Jour.*

PHARMACOLOGICAL STUDIES OF SUBSTANCES OF THE FILICIC ACID GROUP.

STRAUB (*Archiv fuer Experimentelle Pathologie und Pharmakologie*, Bd. xlviii, Heft 1 and 2).

The results of Straub's study are, in brief, that he finds the poisons derived from felix are poisons for all forms of organized plasma; they are muscle-poisons which particularly affect the musculature of worms and mollusks in contrast to that of other animal organisms. In this way the action of these drugs upon tapeworm is readily to be understood. The author has studied the fate of these substances in the animal organism and has found filicic acid in the feces; but about 80 per cent. of the substance administered had disappeared. It did not appear in the urine, and had evidently been destroyed in the organism. It is not improbable that the decomposition occurred in the intestinal canal, and that only the decomposition products were absorbed.—*Phila. Med. Jour.*

THE DOCTOR AND THE SCHOOL TEACHER. CAN THEY NOT WORK MORE IN HARMONY?

R. C. NEWTON (*Med. Rec.*, Oct. 18, 1902) writes the following: Nine out of ten family doctors are content to wait until a child breaks down in school before interfering. While teachers are too imbued with the determination to get as much work as possible out of the scholars, physicians are too inconsiderate in ordering all school work stopped when often a partial intermission would be morally, mentally and physically better. Pupils often work beyond their strength because the teacher is not a clinician and signs of breakdown have been misinterpreted. Physicians should be well enough versed in modern educational methods to direct a child's studies and course of life so that his health shall not be injured, The evils of overstudy and bad hygiene are due to professional laxness. There is too much indifference also to the claims of the "physical culturists," with whom an entente cordiale should be established.—*Am. Med.*

GANGRENE OF EXTREMITIES FOLLOWING SCARLATINA.

Eichhorst has lately reported an interesting case of this kind. Thus: A girl, 4 years old, had an unusually severe attack of scarlet fever. At the end of the third week signs of embolism appeared suddenly in the left foot and leg. Dry gangrene progressed until the line of demarcation was sharply marked above the lower half of the leg. After amputation the child made a good recovery. The left popliteal artery showed evidence of endarteritis, and contained a thrombus 1 cm. above its bifurcation extending for the same distance into both the anterior and posterior tibial branches. Pure cultures of the streptococcus pyogenes were obtained from the pus of a left-sided otitis media and from a furuncle on the forehead. A search through the literature of the subject proved that only 2 cases of gangrene following scarlet fever have been reported. These occurred in boys aged four and nine years respectively,and involved both lower extremities. Altogether 166 cases of gangrene in infectious diseases were collected; of these the greater number followed typhus (42), typhoid (40) and influenza (19); while 10 occurred with pneumonia, 5 with measles one with varicella and one with diphtheria.—*Am. Surg. and Gyn.*

SUPPURATIVE PERICARDITIS IN CHILDREN.

This condition is very hard to recognize, especially in small children; yet upon early recognition and prompt evacuation of the pus depends the life of the patient. The condition is usually mistaken for pulmonary tuberculosis or empyema. But by careful enquiry it may be found that the trouble appeared suddenly and in this as well as in the symptoms the condition of the child bears a striking resemblance to that of one suffering from empyema; the patient is pale, but not sallow, the limbs are wasted and the muscles flabby, and the skin is generally moist. and has not the dry and scaly conditions so often seen in tuberculosis. The children are extremely liable to severe and sudden attacks. The temperature has a generally irregular character, with rather sudden rises and sharp falls. The rapidity of the heart's beat is always great, and seemingly out of all proportion to the general condition of the child, who does not seem specially distressed. On physical examination of the chest the signs suggest either an effusion into the pleural cavity or tuberculous consolidation of the lung, bnt as a rule, no marked increase of the area of cardiac dullness can be mapped out, although epigastric pulsation may be present. It might be suggested that the diagnosis might be assisted by the introduction of an exploring needle, but if symptoms are present that would suggest pericardial effusion it would be much safer to make an incision in an intercostal interspace or resect a rib if necessary rather than pass an exploring needle toward the heart. Unless diagnosis is accurate, rational treatment: the opening of the pericardium and draining the cavity is impossible. Even where it is possible the percentage of recoveries is slight.—*Am. Surg. and Gyn.*

THE DIAGNOSTIC VALUE OF OLD TUBERCULIN.

When he published his first communication on tuberculin, Koch said that he did not think it would be going too far to suppose that tuberculin would become an indispensable diagnostic means in the future. This cannot be said to have been realized, but according to Bandelier (*Deutch. med. Woch.*, May 15, 1902) there was every justification for the supposition. He has employed it in his sanatorium practice in a large number of cases, and asserts that not only is it a certain diagnostic means, but also that it is an absolutely safe one. It has been objected to on the ground that there is a danger of causing the tuberculous process in the lung to become more active, that a reaction does not demonstrate that the tuberculous lesion is situated in the lung, and that it does not tell whether it is active or latent.

Against these objections, Bandelier states that as far as the first is concerned, provided that proper precautions are observed, there need be no risk at all; answering the second, he is able to show that healed tuberculous lesions do not call forth a reaction, and therefore a reaction indicates that the process is active; and seeing that the doubtful cases, for which it is so necessary to have a means of early diagnosis, are cases in which there are some sign pointing to a possible pulmonary affection; therefore it is a reasonable inference, on obtaining a reaction, to assume that the tuberculous lesion is situated in the lungs, In late cases the marked reactiohs are not infrequently absent, this being due to auto-intoxication (according to Durban); but this fact does not disturb the value of the test since it is only required in doubtful cases. It is important to have a uniform method of employing the test if one wishes to bring it into general use.

Koch's original method was to start with 1 mg. (approximately 1-64 grain), to repeat the injection after one or two days with 5 mg., and after a similar pause, to use 10 mg. The temperature must become elevated by ½° C. before one calls it a reaction, and for safety sake, the same dose which produced the raising of the temperature must be again repeated after the temperature has subsided, so as to exclude all chance extraneous factors. Although Durban considers that 5 mg. is to be regarded as the maximal dose for diagnostic purposes, Bandelier has reason to believe that at times no reaction is obtained with this dose, and yet the presence of a tuberculous lesion may be discovered by the injection of 10 mg. It is also wise to repeat the 10 mg. dose when the first attempt does not call forth a reaction before concluding that the patient has no active tuberculosis.

The author advises the use of the injections to ascertain whether a patient is cured or not before discharge. He states that after injecting a patient it is often possible to detect physical signs in the lungs which were not discoverable before. One should, however, remember that after treatment with either new or old tuberculin no reaction is obtainable, and therefore in this case it is of no diagnostic importance. In conclusion, he sums up as follows:

1. Tuberculin is the most trustworthy means of diagnosis for early cases which we possess.
2. It is desirable therefore to attempt to secure a general use of the method, not only in sanatorium, but in private practice.
3. That one should, for the purpose of diagnosis, adhere minutely to Koch's method.
4. Tuberculin is the safest means of determining whether a patient is cured or not.—*Brit. Med. Jour.*

TYPHOID SPINE.

Pallard (*Rev. Méd. de la Suisse Rom.*, Aug. 20, 1902) reports a case of rare sequel of typhoid fever, which was first described by Quincke, in 1899, under the name of spondylitis typhosa. A locksmith, aged 21, was admitted to hospital on January 14th, on about the fourth day of an attack of typhoid fever of marked adynamic type. For about 14 days the temperature ranged between 102.2 and 104°, and the pulse between 120 and 140. After a convalescence prolonged by an attack of phlebitis of the right lower limb he was discharged on March 25th. On April 15th he resumed work, but abandoned it two days later on account of the reappearance of phlebitis. He stayed indoors, but occasionally walked a few steps. About the same time lumbar pain was noticed. On May 15th, while seated on a garden seat, he was suddenly seized with lumbar pain, so violent that he reached his room with the greatest difficulty. On Day 18th he entered hospital with a temperature of 105.8°, which next morning fell to 100.4°, but rose again in the evening to 102.2. On the following day he was apyretic. There was slight tenderness in the course of the saphena vein, which was otherwise normal. The patient lay with flexed knees and hips and rigid abdominal muscles. The whole of the lumbar spine was the seat of intense diffuse pain, and was held rigidly. The knee-jerks were exaggerated, and there was a difficulty in a sitting position in completely extending the legs. Babinski's sign was absent. The neck was rigid. The pupils were unequal, the left being markedly dilated. The corneal reflex was normal. There was no sensory disturbances. The urine was normal. There was impaired resonance and deficient air entry below the spine of the left scapula with scattered rales over the whole lung. On May 23d the condition was very similar except for the presence of epileptiform tremors, which were most marked on the left side. The sputum, which was copious, contained no tubercle bacilli. The lumbar region was extremely tender, but not swollen. On June 19th the pain appeared to be worse than on admission. The sphincters were unaffected. The inequality of the pupils had disappeared. A radiograph showed no perceptible thickening of the spinal column. Treatment consisted in rest in bed and small doses of bromide. Early in July improvement was noted, and on July 10th the man could walk without support. There was no tenderness over the spine, but the knee-jerks were still exaggerated. It was remarkable that the intensity of Widal's reaction, which was present on admission, developed steadily *parri passu* with an increase in the spinal symptoms. It is the rule for the reaction to be obtainable unusually long after convalescence if the typhoid bacillus persists in a localized form, for instance, of osteomyelitis. As the reaction was present in one reported case on the 118th day, in another after six, and in another after twelve, months, it is probable, though not proved, that typhoid spondylitis is due to Eberth's bacillus. Seven previously reported cases collected by the writer show that this is a fairly typical case, though inequality of pupils and pulmonary symptoms are unusual. In some there was merely pain, in others more or less marked swelling of the soft parts in the lumbar region; in others, again, decided lumbar kyphosis with prominent spinous processes. The attack of typhoid fever is usually severe, and the onset of spinal symptoms may be delayed for months. The diagnosis is usually easy, unless no history of typhoid fever is obtainable. Typhoid spine, unlike Pott's disease, almost invariably begins abruptly, usually with high pyrexia and rigors. In the majority of cases there was a history of undue exertion undertaken before full restoration to health. The prognosis is good, though recovery may be delayed for a year. The pathology is probably a localized osteitis of the vertebræ, which has no tendency to suppuration. In a case of Quincke's the typhoid spondylitis was immediately preceded by osteitis of the parietal bone. Treatment consists in absolute rest, and in intractable cases the application of a plaster jacket. —*British Medical Journal.*

RELAPSING PSEUDO-LIPOMA.

Rigal (*Lyon Méd.*, May 25, 1902) records a case characterized by globular nodosities situated in the subcutaneous cellular tissue, unconnected with the lymphatic system, which he believes to be relapsing pseudo-lipomata, His patient, 19 years of age, had a mild attack of jaundice when 12 years old, and transitory left facial paralysis when 18. He entered hospital for the treatment of a varicocele. He had a family history of rheumatism and neuropathy. The subcutaneous tumors were five in number, each about the size of a haricot bean, situated one on each forearm, one in the seventh left intercostal space, one in the left iliac abdominal region, and the fifth behind the left great trochanter. The swellings were not easily detected by inspection. On palpation they were found moderately hard and fairly mobile, but not definitely displaceable. They were not painful either spontaneously or to pressure, and sensation was diminished in the skin covering them, and their volume was not constant but varied considerably from time to time.

Removal of the tumor from the right forearm showed it to consist of connective tissue enclosing numerous fat lobules.

General examination of the patient showed slight swelling of the face with a subicteric tinge of the skin. The pulse and breathing were normal. The urine contained no albumen. There was a marked increase of eosinophile cells in the blood. The patient was neurotic, the reflexes were exaggerated, sleep was troubled and frontal and orbital neuralgic pains were often present. The treatment adopted consisted in hydrotherapy with rigorous hygiene, generous feeding and the administration of the iodides.—*British Med. Jour.*

TUBAL PREGNANCY: FATAL HEMORRHAGE WITHOUT RUPTURE.

Aspell (*Am. Jour. Obst.*, May, 1902) exhibited at a recent meeting of an American Society an unruptured sac with a ruptured vein in the wall of the tube. A shopgirl, aged 22, previously in perfect health, was seized with abdominal pain. She walked home, a short distance. A physician was called in, but the patient became worse, and was sent to hospital almost exsanguinated. No operation was permitted and the patient died. Baker observed, in discussion, that he once had ether administered to a patient with signs of hemorrhage from a fetal sac, but she died before she came under the anesthetic to allow of examination. At the necropsy two quarts of blood were found in the abdominal cavity. There was a tubal sac without a trace of rupture; the blood came from a ruptured vessel at the end of the Fallopian tube. Pregnancy had advanced to the second month.—*British Med. Jour.*

NEW MEDICAMENTS AND NUTRIENTS IN THE TREATMENT OF TUBERCULOSIS.

Starting with a very unfavorable notice of both old and new tuberculin, G. Schroeder (*Zeit. f, Tuber. u. Heilst.*, July 1902) goes on to discuss the most prominent modern medicaments which have been recommended in the treatment of phthisis. Of Buchner's alcohol packs, he says that he is highly satisfied with the results which he has obtained by this method. The application is said to produce local hyperemia and thus to increase the antitoxic action of the juices in the affected parts. He employs alcohol externally in all cases of laryngeal tuberculosis and as a method of reducing the fever in pulmonary cases. Against the suggestion that large doses of alcohol internally increase the capability of the organism to neutralize the tuberculous toxin, he argues that since the results are so very problematical and the baneful effects so very certain, this form of treatment cannot be recommended.

With regard to the more recent investigations on hetol treatment, he proposes reserving his opinion, until another article from his pen appears. A few words are spared for the theory that consumptives take up too much oxygen and form too much carbonic acid, and the deduction from it, that the treatment should be conducted to remedy this defect. The next points touched upon are the uses of arsenic and sodium cacodylate both of which appear to him to be based on weak grounds. Mendel recommends intravenous injections of the latter drug in doses of 0.05 to 0.15 gram *pro die*, with two days interval between. Free iodine is said to have a beneficial influence on phthisical processes, and the method suggested of employing this by giving potassium iodide internally and at the same time using inhalations of turpentine.

According to Italia, an infusion of pancreas destroys the tubercle bacillus, prevents the development of the same and cures the disease. Pancreas is said to contain a specific antitoxin for tuberculosis. In dealing with the treatment of symptom, Schrœder mentions suprarenal extract for hemorrhage, as well as gelatine injections. For reducing fever he has good results from pyramidon, which is an amido-derivative of antipyrine. At times he combines with this drug camphoric and salicylic acids. and is very pleased with his results. The dose of pyramidon which he recommends is 1 to 3 grams (15 to 45 gr.). Purgatin in doses of 0.3 to 0.6 gram (5 to 10 gr.) every evening is well spoken of. For the anemia of phthisis he mentions trife rin, which contains 22 per cent. of iron and 2½ per cent. of organically combined phosphorus. The dose is given at one tablet, containing 5 gr., three times a day.

Ferratin is also spoken well of, especially when given in the form of the iodized ferratin. Among the new inhalation preparations he finds forman most highly recommended. It can be applied either by means of an inhalation apparatus, or on cotton wool, or in the form of an ointment. Turning to the new nutrient preparations he has good words to say of roborat, which he prefers in the form of rolls, containing 50 per cent. roborat. Eubiose is a new preparation made from blood and containing CO_2. It is said to be easily digestible. Alboferrin is also well spoken of.—*Brit. Med. Jour.*

THE ETIOLOGY OF THE SUMMER DIARRHEAS OF INFANTS.

Duval and Bassett (*Am. Med.*, September 13, 1902) are studying the bacteriology of these conditions, and furnish a preliminary report. From the stools of 42 typical cases—the total number examined unfortunately not being stated—they have isolated a specific bacillus, present in large numbers in acute cases, but secured with difficulty in mild or chronic cases, It was also found in scrapings of the intestinal mucosa at necropsy and once in the mesenteric glands and liver. This bacillus is identical in morphology, cultural features, pathogenic properties, and reaction to specific serum with the bacillus dysenteriæ (Shiga) isolated from cases of acute dysentery in the adult, first by Shiga of Japan, and afterwards by many other observers. The authors obtained agglutinative reactions when the organisms were tested:—

1. With the blood serum from the patients from whom they were secured.
2. With the serum of other infants similarly suffering.
3. With the serum of adult patients, with acute dysentery.
4. With anti-dysenteric immune serum.

The specific bacillus was not found in the stools of healthy children, nor of those with simple diarrhea and marasmus,nor did the blood serum of the latter agglutinate the dysenteric bacillus, These cases from which the specific organism was obtained included examples of so-called dyspeptic diarrhea, of entero-colitis and of marasmus with superimposed infection. It is not stated how many of the 41 cases were fatal, The authors conclude that infantile summer diarrhea is caused by intestinal infection with bacillus dysenteriæ (Shiga) and is therefore etiologically identical with the acute bacillary dysentery of adults.—*Brit. Med. Jour.*

BRONCHITIS FROM ADENOIDS.

Méry states that the inflammation of the nasopharynx which exists in patients suffering from adenoids may spread to the bronchi and give rise to a severe bronchitis, accompanied by signs of emphysema. The curative treatment is removal of the adenoid vegetations. He recommends the following medication in addition:—

℞	Syr. ipecac	ʒiiss
	Sodii benzoatis	gr. xv
	Sodii bicarb	gr. viii
	Syr. polygala (senega)	ʒv
	Decoct. polygala	℥iv

M. Sig.—One teaspoonful every hour.

Mustard poultices should be applied to the chest and hot drinks given, morning and evening a small quantity of the following pomade should be introduced into the nares by means of an applicator:—

℞	Acidi borici	ʒi
	Resorcin	gr. iii
	Vaselini	℥i

M. Sig.—Apply locally.

The patient's mouth must be closed; he will then draw the pomade through the nose. Instead of the introduction of the foregoing a few drops of mentholated oil, 1 to 100, may be used in the form of a spray. Later stimulating expectorants, such as terpin hydrate, in doses of ½ to 1 grain will be of use.

During convalescence one to two teaspoonfuls of the following may be taken every morning:—

℞	Sulphuris sublim	ʒiiss
	Mellis rosæ	℥iii

M. Sig.—One to two teaspoonfuls in the morning.—*Journal American Medical Association.*

HEMORRHAGE FROM THE NOSE OR THROAT.

The following combination is of great service in checking severe forms of epistaxis either from eroded vessels when the cartilaginous portion is destroyed or following operations on the nose or throat:—

℞	Acidi tannici	ʒii
	Acidi gallici	ʒiii
	Glycerini	ʒii
	Aq. destil	℥i

M. Sig.—To be used locally by means of a swab or saturate a piece of sterilized gauze and introduce into the nares anteriorly or through the nasopharynx.—*Jour. A. M. A.*

BURNS.

Biddle in *Penn. Med. Jour.*, state that 50 per cent. of the deaths following burns is caused by the shock, He recommends keeping the circulation and nerve centres in the best possible condition. To do this he advises strychnin, digitalis, whiskey and aromatic spirits of ammonia in full doses with a good nutritious diet. In order to control the pain and delirium and to procure the necessary amount of rest he recommends the following:—

℞	Pot. bromidi	gr.xx
	Chloralis hydratis	gr. vi
	Elix. simplicis q.s. ad	℥ss

M. Sig.—To be taken at one dose and repeated as necessary.

THE SURGICAL TREATMENT OF EPILEPSY.

Roswell Park, in *American Medicine*, for November, 1892, concludes as follows:

1. Epilepsy is the last disease to which surgical measures should be indiscriminately applied. In judiciously selected cases, radical operations of various kinds, suited to the individual needs of each case, have given far more satisfactory results than has the non-operative or medicinal treatment.

2. Every case must be studied as a problem by itself. The only general laws applying are those regarding the removal of peripheral or local foci of irritation and the destruction of paths of conduction which convey disturbing impulses. In each case we must decide as to the operative method by which we may best meet these indications.

In order to attain the best results patients should be seen early. It would be well to have every epileptic carefully studied by an accomplished surgeon, who should review the case with a view to the possibility of surgical intervention.

4. Operation, when indicated and undertaken, should be regarded as a first measure to be followed, and often preceded, by others looking to a correction of all faults of diet, of elimination, etc. Long-continued attention to these matters is the price of eventual success.

5. In those cases characterized by blanching of the face, when the seizures can be warded off or mitigated by the prompt use of amyl nitrite we may well consider the propriety of an exsection of the cervical sympathetic.

CHRONIC BRONCHITIS.

The following combination is recommended by E. Fletcher Ingals to relieve the cough in chronic bronchitis when the opiates are not contraindicated:

℞	Morph. sulph	gr. 1
	Ammon. carb	gr. xxx-xl
	Syr. pruni virg.	
	Mist. glycyrrhizæ comp., āā	ʒiv

M. Sig.—One teaspoonful in water to relieve the cough; or:—

℞	Terpin hydratis	gr. ii
	Ext. cannabis ind	gr. 1-20
	Codeinæ	gr. 1-8
	Ol. menth., pip	gtt. ss
	Sacchari albi	gr. iii

M. Ft. capsula No. 1.—Sig.: One every four hours until the cough is relieved.—*Jour. A. M. A.*

TREATMENT OF CEREBROSPINAL MENINGITIS.

Blauat points out that hot baths are very efficacious in the treatment of acute nontubèrculous meningitis, and especially in cerebrospinal meningitis. The baths are given at a temperature varying from 100.4 to 104° F., and are continued on an average for 25 minutes. They are repeated every three or four hours, day and night, throughout the disease.

Woroschilsky and Wolisch noticed that after the first bath insomnia disappeared. Later the pains in the head, the rigidity of the muscles of the neck, and the other pathologic symptoms also disappeared. Wolisch obtained five cures out of seven cases treated. Lumbar puncture may also be practised. The method is ordinarily harmless, provided the cerebrospinal fluid is not aspirated. It may be repeated until the cerebrospinal fluid becomes normal, which is determined by microscopic examination and by cultures. The method should be used only when the hot baths fail.—*American Medicine.*

LUMBAR PUNCTURE FOR THE POSITIVE DIAGNOSIS OF TUBERCULOUS MENINGITIS.

Hand (*Phila. Med. Jour.*), in an interesting article, finds among the difficult diagnostic problems the determination of the existence or absence of meningitis to stand well to the front. The symptoms must be carefully considered and when such symptoms as headache, intolerance to light, rigidity of the neck, retraction of the head, strabismus, ptosis, vomiting, irregular pulse and respiration, exist, the diagnosis is fairly clear. To these symptoms others confirmatory of the disease are of great value; Convulsions, stupor, the hydrocephalic cry, the cerebral tache, constipation, sinking in of the abdomen, exaggeration or absence of knee-jerk, ankle clonus, Kernig's sign and local palsies. Since meningitis may cause only a few of these symptoms, and any of them may be produced by other causes, the diagnosis of the disease is by no means easy. Lumbar puncture is a valuable aid in doubtful cases. The changes which occur in the cerebrospinal fluid as a result of meningitis are diminution or absence of sugar, increase of albumin, and except in simple serous meningitis, the presence of leukocytes, bacteria and frequently endothelial cells.—*St. Louis Courier of Medicine.*

ETHYL IODID IN THE TREATMENT OF WHOOPING COUGH.

From the fact that whooping cough presents a certain analogy to asthma, Bardet directed that ethyl iodid be employed to relieve the paroxysms of coughing. In two rebellious cases the following procedure was adopted: At the onset of a paroxysm a large-mouthed bottle, containing a small quantity of ethyl iodid was placed under the patient's nose so that the fumes of the drug were inhaled. The attacks diminished in frequency and intensity, the bronchial secretions at the same time became more fluid. The effects of this treatment, although very marked at first, diminished later, but the progress of the disease was shortened nevertheless, and at the end of eight days the number of paroxysms had been reduced from 40 to 6 in 24 hours.—*American Medicine.*

A law which has become operative in France, requires that a child must be vaccinated during its first year, revaccinated at the age of eleven and again at twenty-one.

INFANTILE BRONCHITIS.

Debove, in *Prog. Medical*, recommends the following for infantile bronchitis:—

℞ Syr. lactucarii..............................ʒv
Syr. adianti
Syr. papaveris (poppy), āā.... ....℥iss

M. Sig.—From four to six teaspoonfuls daily; or:—

℞ Syr. lactucarii..............................ʒv
Syr, belladonnæ
Syr. aurantii flor., āā........... ....ʒii
Syr. tolutani................................℥i

M. Sig.—From four to six teaspoonfuls daily.

GASTRALGIA IN CHILDREN.

The *Prog. Medical* recommends the following in the gastralgias of children:—

℞ Tinct. belladonnæ
Tinct. calumbæ
Tinct. arnicæ
Tinct. opii camph., āā.......................ʒi

M. Sig.—From five to ten drops in a little sweetened water.—*Jour. Am. Med. Assn.*

Heat relieves the pain of inflammation, but increases that of suppuration. This is a valuable diagnostic aid in appendicitis.

BOOK REVIEWS

Diseases of Infancy and Childhood: For the Use of Students and Practitioners of Medicine.—By L. Emmett Holt, M.D., LL.D.

This work, being the second edition, revised and enlarged, in fact, much of it rewritten by Dr. Holt, is a most excellent work, It is, in the various departments, exhaustive and comprehensive without being prolix, bearing evidence throughout of practical experience, hard work, careful powers of observation and skill in bookmaking.

The work has two hundred and twenty-five excellent illustrations including nine colored plates, and to say that from the publishers' standpoint it is almost ideal, seems almost superfluous, as the announcement that it is from the house of D. Appleton Company would convey the same thought.

From a pathological standpoint Dr. Holt has presented a strong volume and one thoroughly up-to-date, but viewed therapeutically it is extra valuable.

Dr. Holt very pointedly says: "Treatment in the diseases of children and particularly those of infants is a difficult subject. Therapeutics in infancy consists of something more than a graduated dosage of drugs. Many therapeutic means which are valuable in adults are useless in children, and many others, which are of little value in adults, are extremely useful in children.

There is no doubt of the truth of the statement that children in the past have suffered much from over-zealous treatment, particularly from drug-giving (and he might well have said, many are still suffering from the misdirected and excessive energy of their doctors). It should be a fundamental principal to never give a dose of medicine without a clear and definite indication. If this rule is followed it is surprising to find how often medication can be dispensed with, and also in many cases how much better children do without drugs than with them. A second rule is equally important: Never to give a nauseous dose when one that is palatable will answer equally as well. This is no small matter and one that is worth the physician's careful attention if he would succeed in the management of sick children. The simpler prescriptions are made the better. As a rule infants revolt against most of the highly-seasoned syrups and elixirs which are used to disguise the taste of unpleasant doses. Bitter medicines when mixed with water are frequently administered without the slightest difficulty."

Dr. Holt lays special stress upon the advantage of small doses frequently administered, but fails to suggest that occasionally rather than too frequent interruption of the rest of the little patient, it were better to pursue the opposite course.

He also fails to lay proper stress upon the administering of medicines to babes by the attendant being gently firm, and the advantage of opposing its resistance by the seemingly severe though kindly method of holding the little one's nose firmly and placing the medicine from the container far back in the faucial space, strangling being thus prevented.

The most excellent article in a general way "Convulsions" (page 703) under the head of treatment, oddly says: "As soon as the convulsions have ceased, the cause should be sought after and treated."

As a matter of fact the cause should be in the sought in the very outstart, and in the majority of cases it will be found due to high temperature and the immediate reduction of same will be demanded by a carefully graduated cooling bath. An emphatic warning should have been uttered against the almost stereotyped "expressly hot bath" given to the baby in a convulsion.

Holt's book is so uniformly good that one would fain praise it all, but the reviewer who pursues such a course fails in his duty, hence a reference to the weak points.

The section devoted to the feeding of infants is good, except that part concerning artificial foods, which was either carelessly prepared or else tinctured with prejudices. Under the headline "Infant Foods," p. 162, Dr. Holt states: "It is not possible, nor even desirable for a physicisn to know all about the infant foods with which the market is flooded," On page 163 there is a table of analysis of eight infant foods, these analyses being of the foods as they are in their commercial form before being prepared for the nursing-bottle, and seem to be fair analyses.

Opposite the colored chart on page 163 the writer says: "A better idea of the composition of these foods can be obtained by a study of the accompanying chart (plate 3), which shows their solid constituents as compared with those of woman's milk. The essential feature of the foods are seen at a glance, i.e., they are composed principally of carbohydrates and are lacking in fats." All of which is essentially misleading, as two of the foods in the illustrated chart are universally known to be presented to the profession as "milk modifiers," pure and simple, and accepted by the profession as such.

In Sajou's Annual and Analytical Cyclopedia of Practical Medicine, vol. v., F. A. Davis Company, publishers, 1900, is an article entitled, "Nursing and Artificial Feeding," signed by L. Emmett Holt and Linnaeus Edford LaFetra.

This article contains a table of analysis of five infant foods as prepared for the nursing bottle, two of which (dried milk foods) are prepared with water only, and three of which are prepared with cow's milk and water.

This table of analysis is referred to in the test as "careful comparative analytical study made of a number of the most widely known manufactured infant foods, standardizing their products as prepared for the nursing bottle, in accordance with directions for infants of six months." This table is free from the objection that applies to the table in Holt's book, page 163. In "Food and Dietetics," by Robert Hutchinson, M.D., William Wood & Company, publishers, 1901, proprietary foods for infants are described at length.

Dr. Hutchinson divides infant food into two classes, viz.:—

1. Foods requiring the addition of water only to be ready for use.
2. Foods which require the addition of milk to fit them for use.

Analyses are given of the many infant foods as they are in the commercial packages, and the accompanying descriptions state how they are to be prepared for the nursing-bottle. Analysis of some of these infant foods when prepared for the nursing-bottle are also given, and these analyses include three foods that appear in the table of analysis in Holt's book, one of which is prepared with water and cow's milk, and the other two are prepared as directed with water only. The descriptions and the analyses in this book are entirely fair.

Fairness in the consideration of all problems confronting the teacher is essential, and commercial foods for children should be no exception.